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MANAGEMENT OF METASTATIC MAMMARY CANCER

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The majority of women with primary breast cancer eventually develop dissemination of their disease despite mastectomy and prophylactic radiation therapy. This indicates that metastasis occurs early. The progession of the metastatic cancer, however, is extremely variable. In some cases there is rapid growth and dissemination of the tumor, whereas in others the cancer appears to lie dormant for several years before the metastases manifest themselves. There is no satisfactory explanation for the variable course of this disease.

Palliative therapy constitutes an important aspect in the management of patients with breast cancer. X-ray therapy and endocrine treatment provide effective palliation in many patients with metastatic breast cancer. Not only do these modalities afford relief of symptoms but in many cases the growth of the cancer is temporarily arrested, thus providing prolongation of useful life. It is the purpose of this paper to review the endocrine treatment of metastatic breast cancer and to outline the sequence of therapy that is most likely to yield optimum results.

OOPHORECTOMY

Oophorectomy induces objective remissions in about 44% of premenopausal women with metastatic breast cancer and constitutes the optimal initial treatment for these patients.[1] The remissions average nine months in duration, with a median period of six and one-half months. It has been demonstrated that oophorectomy induces its benefit by removal of the major endogenous source of estrogen.[2] Approximately one-half of the patients have non-estrogen-dependent tumors and fail to obtain improvement from castration.

No practical means for selecting patients for oophorectomy has been found. Neither the histological picture of the cancer nor any clinical manifestation of the disease has been helpful in predicting a favorable response. Thus, oophorectomy is undertaken with only an approximate 50% expectation of benefit. Oophorectomy will occasionally produce improvement in postmenopausal women, but it cannot be recommended, since the yield of beneficial results is too small. Patients who fail to respond to oophorectomy are unlikely to benefit from other forms of endocrine therapy. Administration of cortisone or an estrogen preparation is occasionally beneficial, and hypophysectomy is being explored as a means of helping these patients.

ADRENALECTOMY

Of 38 women with metastatic breast cancer, all of whom had previously been oophorectomized, bilateral adrenalectomy produced objective remissions in 45%.[1] The average duration of the remissions was nine months, with a median of seven months. Adrenalectomy appears to produce benefit by removal of another source of endogenous estrogens. Thus, patients who have obtained a beneficial response from castration are likely to have a second remission from adrenalectomy. Patients who fail to benefit from oophorectomy also fail to respond to adrenalectomy. Knowledge of the initial response to oophorectomy provides the best means of selecting patients for adrenalectomy.

In 25 postmenopausal women, combined oophorectomy and adrenalectomy in one stage produced objective remissions in 16 cases.[3] (Of these 25 patients, 15 had spontaneous menopause and 10 had artificially induced menopause. Twelve of the 15 with spontaneous menopause and 4 of the 10 with artificial menopause had remissions.) The average duration of the remissions exceeds eight months (eight patients are still in remission at present). These observations suggest that in approximately 50% of cases, in all age groups, mammary cancer is estrogen-dependent and will respond

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Drs. Bronson Ray, Charles Harrold, Willet F. Whitmore Jr., Henry T. Randall, Frank Adair, Norman E. Treves, Joseph Farrow, and George C. Escher assisted in this study.

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3. Lipsett, M. B., and others: Results of Adrenalectomy in the Treatment of Advanced Breast Cancer, to be published.

favorably to removal of endogenous sources of estrogen. Combined oophorectomy and adrenalectomy is the recommended initial therapy in postmenopausal women. There is no practical method of selecting patients who will benefit from combined oophorectomy and adrenalectomy, and it must be undertaken with an approximate 50% chance of obtaining a favorable response.

HYPOPHYSECTOMY

Total hypophysectomy in man is now an established surgical procedure which can be performed without great risk.[4] Pearson and others have obtained objective remissions from hypophysectomy in women whose breast cancer had become reactivated following oophorectomy and adrenalectomy. This suggests that the growth of some breast cancers may be dependent upon a pituitary hormone (or hormones) in addition to their estrogen dependence. Hypophysectomy not only eliminates pituitary hormones but also produces profound suppression of ovarian and adrenal function, comparable to the surgical removal of these endocrine glands. Thus, hypophysectomy is being explored as the initial endocrine treatment for patients with metastatic breast cancer.

In a series of 58 patients with breast cancer who underwent hypophysectomy, Pearson and others [4b] obtained objective remissions in 54% of 37 cases that could be evaluated. Luft and Olivecrona [4a] have obtained similar results in their series of 37 patients. A further period of observation is required to determine the average duration of hypophysectomy-induced remissions. If hypophysectomy can produce a summation of the beneficial results of oophorectomy, adrenalectomy, and hypophysectomy performed in sequence, then this procedure may become the optimal initial endocrine treatment for metastatic breast cancer.

ANDROGEN

It has been well established that androgen therapy will induce objective improvement in about 23% of women with breast cancer in all age groups. The average duration of the remissions is seven and one-half months, with a median of four and one-half months.[5] The mechanism by which androgen induces remissions is not known, but it has been considered that androgen may neutralize the effects of endogenous estrogen. If this is the mechanism of androgen action, it does not appear to be an efficient neutralizing agent, since in approximately 50% of cases mammary cancer is estrogen-dependent and androgen is effective in only one-half of this number of cases.

It has been demonstrated that androgen may accelerate the growth of mammary cancer in some patients.[6] Recent evidence indicates that androgen can be converted into estrogen in some patients.[7] This offers a possible explanation of why androgen can produce exacerbation of tumor growth.

Since androgen therapy carries the potential of accelerating the growth of breast cancer, and since the percentage of remissions is less than with ablative procedures, it would seem logical to reserve androgen treatment until the disease has relapsed after oophorectomy, adrenalectomy, or hypophysectomy. Androgen therapy is indicated in those patients who cannot tolerate or who refuse ablative therapy.

ESTROGENS

Administration of estrogens has been demonstrated to induce objective remissions in postmenopausal women with breast cancer. The combined results of several clinics [5] showed objective remissions in 44% of the cases. The average duration of the remissions was eight months, with a median of about four and one-half months. It has been well established that estrogens can also accelerate the growth of breast cancer. Since in approximately 50% of cases breast cancer is estrogen-dependent, estrogen is a potential hazard in this group of patients.

The mechanism by which estrogens induce remissions in women with breast cancer has not been established. It is possible that estrogens may induce beneficial effects by suppression of pituitary function.[8] Some breast cancers may depend upon two hormones (e. g., estrogen and growth hormone), and it is possible that estrogens may have dual effects on the growth of the cancer, one to stimulate and the other to suppress, of which either effect might predominate.

Since estrogens are potentially capable of producing harmful effects in about 50% of all women with breast cancer, it would seem wise to restrict their therapeutic use to those patients who fail to respond to castration or to castration and adrenalectomy. Estrogen therapy should be tried cautiously when ablative procedures cannot be done.

CORTISONE

Cortisone, in doses of 200 to 400 mg. a day, will induce objective remissions in about 30% of patients with metastatic breast cancer.[9] The average duration of the remissions is three months. Cortisone in doses of 50 to 75 mg. per day will occasionally produce improvement, but remissions comparable to those obtained with adrenalectomy have not been observed with small doses of cortisone alone.

Cortisone will induce remissions in patients with either estrogen-dependent or non-estrogen-dependent mammary cancer. The mechanism by which cortisone inhibits tumor growth is not known, but it may be due to a direct effect of the hormone on the tumor. Since the remissions induced by cortisone are usually of short duration, it seems best to reserve this therapy for patients who fail to respond to the other modalities of endocrine ther-

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apy or who have relapsed after such therapy. Cortisone is also useful in critically ill patients. If a remission can be induced with cortisone therapy, the patient may then be in a suitable condition for other forms of endocrine therapy.

X-RAY THERAPY

X-ray therapy will induce objective regression in up to 75% of individual lesions of metastatic mammary cancer. The duration of the growth-inhibiting effects of radiation is variable, and figures for the average duration of response in different organ sites are not available. Since x-ray therapy induces its effects only in the local area being treated, it is our opinion that endocrine therapy constitutes the optimal initial therapy for metastatic breast cancer. When endocrine therapy induces an objective response, not only is there prompt relief of symptoms from individual lesions but also the growth of all metastatic lesions is temporarily inhibited.

COMMENT

The table summarizes the results of the various forms of endocrine therapy for metastatic breast cancer. In the figure the sequence of endocrine therapy that, at present, appears to offer the optimum therapeutic results is presented. This sequence of therapy will undoubtedly be modified as more experience is accumulated. Thus, if hypophysectomy can produce a summation of the beneficial effects of oophorectomy, adrenalectomy, and hypophysectomy performed in sequence, then hypophysectomy may become the preferred initial treatment. It will also be of interest to determine whether estrogen or androgen administration can produce tumor-inhibiting effects in patients who have failed to respond or who have relapsed after total hypophysectomy.

The possible mechanisms by which alterations in endocrine environment affect the growth of breast cancer have been briefly discussed. The present evidence suggests that the growth of mammary cancer is, in many cases, dependent upon circulating hormones that are secreted from the ovaries, adrenals, and pituitary gland. Removing or lowering the titer of these hormones results in temporary cessation of growth and regression of the cancer. This concept provides a rational physiological basis for treatment.

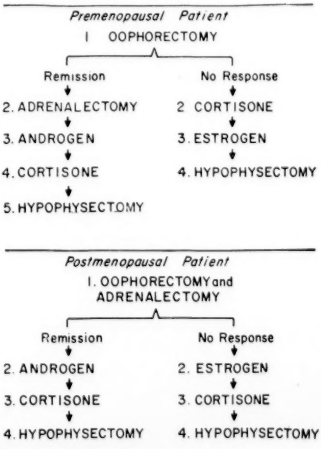
All forms of endocrine therapy so far studied produce only temporary palliative effects. This suggests that breast tumors are only partially dependent upon hormones for their growth and that biological adaptation can occur whereby the tumor grows in the absence of endocrine stimuli. Endocrine therapy has been reserved for advanced stages of the disease. No information is available to determine whether ablative endocrine therapy might be more effective if carried out earlier in the course of the disease. Greene [10] has presented evidence to suggest that primary malignant tumors are more dependent upon their environment for growth than are tumors that have become disseminated. Thus, studies of endocrine therapy early in the course of the disease are needed before hormone treatment is permanently relegated to the advanced stages.

Whether endocrine therapy significantly prolongs life in those patients with breast cancer who obtain a favorable response has not been rigidly established on the basis of statistics. On the basis of individual experience, there appears to be no question that useful survival is prolonged in most patients who obtain a favorable response. Carefully planned endocrine and radiation therapy constitute worthwhile treatment for many patients with metastatic breast cancer.

Results of Endocrine Treatment of Metastatic Breast Cancer

Treatment	Status	Cases, No.	Objective Remissions, %	Duration, Mo. Mean	Duration, Mo. Median
Oophorectomy [1]	Premenopausal	75	44	9	6.5
	Postmenopausal	21	10	..	...
Adrenalectomy [1]	(All previously oophorectomized)	38	45	9	7
Combined oophorectomy and adrenalectomy [2]	Postmenopausal	25	64	(8)+	(8)+
*Hypophysectomy [1b]	All ages	37	54	?	?
Androgen [3] (testosterone propionate 100 mg. 3 times a week)	All ages	416	23	7.5	4.5
Estrogen [3] (diethylstilbestrol 15 mg./day or ethinyl estradiol 3 mg./day)	Postmenopausal 5+ yr.	381	44	8	4.5
Cortisone [9]					
200-400 mg./day	All ages	39	31	3	3
50-75 mg./day	All ages	14	14	2	...

* Preliminary observations from a group of 58 patients in whom the results of hypophysectomy could be evaluated.



Recommended sequence of therapy for metastatic breast cancer.

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SUMMARY

Metastatic mammary cancer in premenopausal women was treated by oophorectomy in 75 cases, and remissions averaging nine months in duration were obtained in 33 cases. In 31 postmenopausal women, the same operation gave remissions in only 2 cases. Adrenalectomy in 38 previously oophorectomized patients was followed by remission in 17 cases, and in 25 postmenopausal patients combined oophorectomy and adrenalectomy gave 16 remissions. Evidence of endocrine influences in early mammary carcinoma led to investigation of effects of hypophysectomy, which gave remissions in 20 out of 37 cases. The duration of this improvement remains to be determined. Treatment with estrogens and androgens gave variable effects, some of them harmful, and the remissions that occasionally followed cortisone were brief. Endocrine therapy, whether by ablation or by hormone administration, has the advantage over roentgenotherapy that its effects, when they are favorable, are not confined to the area treated.

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USE OF NITROGEN MUSTARD IN TREATMENT OF SEROUS EFFUSIONS OF NEOPLASTIC ORIGIN

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Effusions into the pleural, peritoneal, or pericardial cavities as a result of metastatic malignancies may be distressing and disabling but are not necessarily immediately fatal. Direct instillation of radioactive colloidal gold is effective in 50 to 67% of cases in decreasing or eliminating the reaccumulation of fluid.[1] There are, however, several disadvantages to the use of radioactive gold. Thus, special facilities are required for its use, and it is difficult to handle. It has a short half-life, it is not universally available, and it is expensive to the patient. In addition, it represents a potential radiation hazard to the patient, doctors, nurses, and technicians. Routine use of radioactive gold therapy is therefore not feasible in most hospitals.

Several reports have shown that direct instillation of nitrogen mustard into malignant effusions may also be effective in decreasing or eliminating reaccumulation of fluid.[2] Experience with use of this drug in this manner has been limited. The total number of cases reported are few, and the period of observation has been short. The purpose of this report is to present the results of direct instillation of nitrogen mustard in 43 patients with malignant effusions treated during the past two years.

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The nitrogen mustard [methyl *bis* (β chlorethyl) amine hydrochloride] used in this study was furnished by Merck & Co., Inc., Rahway, N. J.

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MATERIALS AND METHODS

All patients treated had pleural, peritoneal, or pericardial effusions due to metastatic malignant disease. In all instances the malignant origin of the effusion was proved either by the presence of malignant cells in aspirated fluid or by the presence of fluid with the characteristics of an exudate (specific gravity 1.016 or greater and high protein content) in a patient with known malignant disease.

Table 1 shows the type of primary tumor and the site of effusion in the patients treated. There were 30 patients with pleural effusions, 11 patients with peritoneal effusions, and 2 patients with pericardial effusions. Twelve patients had carcinoma of the breast, 10 had ovarian carcinoma, 6 had lymphomas, 3 had bronchiogenic carcinoma, and the remainder had various other types of malignant disease.

Immediately prior to therapy with nitrogen mustard patients were given 0.2 gm. of secobarbital (Seconal) and 50 mg. of chlorpromazine (Thorazine) orally. The therapy with secobarbital was repeated in two hours if necessary for control of nausea and vomiting. In the patients with pleural and peritoneal effusions, nitrogen mustard was administered in a single injection of 0.4 mg. per kilogram of body weight. In the two patients with pericardial effusion, doses of 10 mg. and 22 mg. of nitrogen mustard were used respectively. The nitrogen mustard was prepared immediately preceding injection by adding 10 ml. of isotonic sodium chloride to each 10 mg. vial.

In the treatment of peritoneal effusion, a paracentesis was done in the usual manner and approximately one-half of the fluid removed. While there was still a free flow of fluid, the nitrogen mustard was administered either through a small rubber catheter inserted into the trocar or through a no. 18 needle introduced at another site. A free flow of fluid must be present before instilla-

tion of the nitrogen mustard in order that sufficient fluid remain to insure dissemination of the nitrogen mustard and to guard against instillation of the nitrogen mustard subcutaneously or into a loculated pocket where it will cause local tissue damage without affecting peritoneal implants.

TABLE 1.—*Direct Instillation of Nitrogen Mustard into Malignant Effusions*

Case No.	Site or Type of Primary Malignancy	Site of Effusion	Result *	Duration of Improvement, Mo.	Present Status	Remarks
1	Breast	Pericardial	++	14	Living	Cardiac tamponade completely relieved
2	Breast	Pleural	++	14	Living	Asymptomatic
3	Breast	Pleural	++	10	Living	No further taps required; disease progressing elsewhere
4	Breast	Pleural	++	8	Living	Asymptomatic
5	Breast	Pleural	++	6	Living	Asymptomatic
6	Breast	Pleural	++	6	Living	Asymptomatic
7	Breast	Pleural	++	2	Living	Asymptomatic
8	Breast	Pleural	++	2	Living	Asymptomatic
9	Breast	Pleural	+	1	Died	No further taps required; no response to x-ray
10	Breast	Pleural	0	..	Died	Terminal; died within 1 wk.
11	Breast	Pleural	0	..	Died	Terminal; died within 2 wk.
12	Breast	Pleural	0	..	Died	Terminal; died within 1 mo.
13	Ovary	Peritoneal	++	13	Living	Asymptomatic; no improvement with radioactive gold
14	Ovary	Pleural	++	8	Living	Asymptomatic
15	Ovary	Pleural	++	6	Living	Completely asymptomatic
16	Ovary	Pleural	++	5	Died	No further taps required
17	Ovary	Pleural	++	2	Living	Asymptomatic
18	Ovary	Peritoneal	++	2	Living	Asymptomatic
19	Ovary	Peritoneal	++	2	Living	Asymptomatic
20	Ovary	Peritoneal	++	2	Living	.....
21	Ovary	Peritoneal	+	3	Died	Decreased frequency and amount of taps
22	Ovary	Peritoneal	+	2	Living	Decreased frequency and amount of taps
23	Ovary	Peritoneal	0	..	Died	Terminal; died within 2 wk.
24	Lung	Pleural	+	6	Died	No response to radioactive gold; decreased frequency of taps
25	Lung	Pleural	0	..	Died	Terminal; died within 2 wk.
26	Lung	Pleural	0	..	Died	Terminal; died within 1 mo.
27	Rectum	Pleural	0	..	Died	.....
28	Rectum	Pleural	0	..	Died	.....
29	Fibrosarcoma	Pleural	0	..	Living	Later responded to radioactive gold
30	Fibrosarcoma	Peritoneal	+	3	Living	No response to radioactive gold first
31	Fibrosarcoma	Peritoneal	+	2	Living	No response to radioactive gold first
32	Fallopian tube	Peritoneal	0	..	Died	.....
33	Undetermined	Pleural	++	12	Died	No further taps; adhesive obliteration
34	Undetermined	Pleural	++	2	Died	No further taps; adhesive obliteration
35	Undetermined	Pericardial	++	8	Living	Cardiac tamponade completely relieved
36	Undetermined	Pleural	0	..	Died	Terminal; died within 2 wk.
37	Undetermined	Peritoneal	0	..	Died	Terminal; died within 1 mo.
38	Lymphosarcoma	Pleural	++	24	Living	Disease under control
39	Lymphosarcoma	Pleural	+	2	Died	Decreased frequency and amount of taps
40	Lymphosarcoma	Pleural	0	..	Died	Terminal
41	Lymphosarcoma	Pleural	0	..	Died	Terminal
42	Hodgkins	Pleural	+	2	Died	Decreased frequency and amount of taps
43	Hodgkins	Pleural	0	..	Died	.....

* ++ indicates no reaccumulation of fluid; +, decreased formation of fluid; 0, no improvement.

A similar procedure was followed for the intrapleural and intrapericardial administration of nitrogen mustard, except that the nitrogen mustard was introduced directly through the needle used to remove the fluid. After administration of the nitrogen mustard, the patient was changed to a new position every 5 or 10 minutes for a period of one hour to insure more uniform distribution of the material throughout the serous cavity. On the day following administration of the nitrogen mustard, paracentesis was repeated and as much fluid removed as possible. The patients were followed closely with x-rays and physical examinations for evidence of reaccumulation of fluid.

RESULTS

Twenty-eight of the 43 patients treated in this manner (65%) were significantly improved. In 20 of the 28 patients there was no reaccumulation of fluid during their remaining course or up to the time of this report. In 8 of the 28 patients there was a marked reduction in the amount of fluid reaccumulating and consequently

a decreased requirement for paracentesis. Twenty of these 28 patients are still living at the time of this report, with improvement lasting from 6 to 24 months in 10 patients and 2 to 5 months in 10 patients. The best responses were obtained in patients with carcinomas of the breast or ovary (tables 1 and 2).

TABLE 2.—*Summary of Results Obtained with Intracavitary Administration of Nitrogen Mustard in Malignant Effusions: Results Compared to Type of Tumor*

Site of Primary Malignancy	No.	Improvement
Breast	12	9
Ovary	11	10
Lymphatic system	6	3
Lung	3	1
Rectum	2	0
Miscellaneous *	9	5
Total	43	28 †

* See table 1.
† 20 complete, 8 partial.

Of those in whom the malignant effusion was completely eradicated, one patient is alive and well 24 months after therapy. Three other patients have survived for longer than 12 months and are still asymptomatic. An additional six patients have remained asymptomatic for periods of 6 to 10 months after therapy.

Fig. 1.—*A*, pleural effusion due to metastatic ovarian carcinoma. *B*, complete disappearance of fluid after nitrogen mustard therapy, with no reaccumulation at the time of death, five months later.

Several examples of marked improvement to therapy are shown in figures 1, 2, and 3. Figure 1 shows a case of pleural effusion due to metastatic ovarian carcinoma. There was full disappearance of fluid after therapy with nitrogen mustard, with no reaccumulation at the time of death, five months later. In figure 2 is shown a case of lymphosarcoma with pleural effusion. There has been no reaccumulation of fluid after 24 months, and the patient is still alive and well. The disease has been kept under control with cortisone and local x-ray therapy to the spleen and lymph nodes as needed. Figure 3 shows a case of pericardial and pleural effusion due to metastatic carcinoma of the breast. This patient had signs and symptoms of cardiac tamponade. After treatment with 10 mg. of nitrogen mustard intrapericardially and 0.4 mg. per kilogram of body weight injected into the left pleural cavity, there was disappearance of fluid; the patient is alive and well after 14 months.

Eighteen of 30 patients with effusions into the pleural space were improved (table 3). In these patients there was adhesive pleuritis and obliteration of the pleural space in three instances. In the remaining patients there was no damage to the pleura except for occasional minimal scarring. A reactive exudation occasionally occurred immediately after nitrogen mustard instillation, with a rapid reaccumulation of fluid. This appeared to be a favorable prognostic sign. Eight of 11 patients with malignant ascites were improved. Although pain rarely was associated with intrapleural injection of nitrogen mustard, this was a common occurrence with the intraabdominal administration. This was frequently associated with nausea, vomiting, and cramps. However, these untoward symptoms subsided within two or three days, and there were no complications or after-effects.

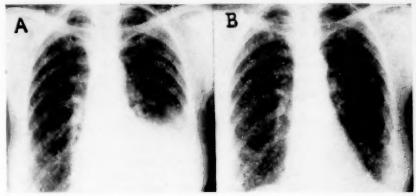

Fig. 2.—*A*, lymphosarcoma with pleural effusion. *B*, no reaccumulation of fluid 24 months after therapy with nitrogen mustard.

Both patients with pericardial effusions exhibited improvement (table 3). In these patients cardiac tamponade was completely relieved, and there has been no reaccumulation of fluid for 14 months in one patient and for 2 months in the other. Ten of the 16 patients who received no benefit from the instillation of nitrogen mustard were in the terminal phase of their illness and died within one month. There was no discernible effect on the rapidity of the course in these patients, either in increasing or decreasing the rapidity of the course.

TABLE 3.—*Summary of Results Obtained with Intracavitary Administration of Nitrogen Mustard in Malignant Effusions: Results Compared to Site of Effusion*

Site of Effusion	No.	Improvement
Pleural	30	18
Peritoneal	11	8
Pericardial	2	2

The side-effects following intracavitary injection of nitrogen mustard were usually minimal. Nausea and vomiting were less than after intravenous administration of nitrogen mustard and were usually well controlled by the use of secobarbital and chlorpromazine. The leukopenia developing after this form of therapy was generally very mild and much less than that developing with intravenous administration of nitrogen mustard. Pain rarely occurred with the intrapleural use of nitrogen

Fig. 3.—*A*, pericardial and pleural effusion due to metastatic carcinoma of the breast. *B*, after treatment with 10 mg. of nitrogen mustard intrapericardially and 0.4 mg. nitrogen mustard per kilogram of body weight injected into the left pleural space, there was complete disappearance of fluid. The patient is alive and well after 14 months.

mustard but was the rule rather than the exception with the intra-abdominal injections. The pain rapidly subsided in these patients, and there were no further complications. Cardiac irregularities were noted for a transient interval in one of the patients with pericardial effusion, but no adverse effects were observed in the other.

COMMENT

The direct instillation of nitrogen mustard into malignant effusions appears to be as effective as radioactive colloidal gold in decreasing or eliminating the formation of fluid. Thus, with radioactive gold, between 50% and 66% of patients were improved following therapy. In the present series, 65% of the patients treated were improved. In addition, the use of nitrogen mustard has several advantages over radioactive gold. It is easier and simpler to administer, no special facilities are required for its use, the drug is always available, it is less expensive to the patient, and it is not as dangerous to personnel involved. The intracavitary use of nitrogen mustard is associated with minimal and transient side-effects. It therefore appears to be the treatment of choice for the management of malignant effusions.

Long survival with relatively good health is possible following intracavitary therapy with nitrogen mustard. Its trial in all cases of malignant effusions is therefore indicated. This is especially true if the patient is otherwise in good physical condition, since most of the failures encountered in this series were in patients in a terminal state. If nitrogen mustard therapy is ineffective, subsequent treatment with radioactive gold may be beneficial. Thus, one patient not responding to nitrogen mustard subsequently responded to treatment with radioactive colloidal gold. The reverse is also true, since four patients who failed to respond to radioactive gold subsequently responded to treatment with nitrogen mustard. Thus, a total of five patients responded to combined treatment with nitrogen mustard and radioactive gold. There were no failures in any patient treated with both nitrogen mustard and radioactive gold. Such combined treatment may increase not only the percentage of favorable responses but the duration of improvement as well.

It is obvious that the direct instillation of nitrogen mustard into malignant effusions is effective against types of malignant tumors that do not usually respond to intravenous administration of this drug. It may be presumed that the effectiveness of this form of therapy is due to high local concentration of nitrogen mustard in direct contact with malignant tumor implants on serosal surfaces. The local concentration of nitrogen mustard may be of sufficient magnitude to be cancerocidal, whereas the dilution by body fluids of intravenously administered nitrogen mustards results in concentrations of nitrogen mustard too low to be effective against these tumors. Larger doses of nitrogen mustard cannot be given intravenously because of the resulting toxic side-effects and severe depression of bone marrow.

In this series, the leukopenia following therapy with nitrogen mustard was very mild and much less than that following intravenous therapy with nitrogen mustard. In addition, nausea and vomiting were also minimal and easily controlled. This suggests that larger doses of nitrogen mustard could be used without adverse side-effects. Larger doses may be more effective in increasing the percentage of favorable responses as well as increasing the duration of response.

In the choice of patients for this form of therapy, cases in which formation of fluid is due to obstructive phenomena should be excluded. If the effusion is chylous in nature or has the character of a transudate, improvement is unlikely, since large obstructing masses of tumor cannot be affected by nitrogen mustard locally. Worthwhile palliation may be obtained in these patients even without complete eradication of the tumor. Thus adhesive pleuritis with obliteration of the pleural space occurred in three patients, one of whom lived for 12 months following therapy. There was no further need for taps, and there was decreased pain, dyspnea, and discomfort.

SUMMARY AND CONCLUSIONS

The direct instillation of nitrogen mustard into malignant effusions was successful in decreasing or completely eliminating the formation of fluid in 65% of the cases treated. These results compare favorably with those obtained with radioactive colloidal gold. The use of nitrogen mustard has several advantages over radioactive gold. It is easier to administer, more universally available, and less expensive, and it presents no radiation hazard. Nitrogen mustard, therefore, appears to be the treatment of choice for malignant effusions. All patients treated with both nitrogen mustard and radioactive gold were improved. Combined therapy with both nitrogen mustard and radioactive gold may give better results than either one alone. Long periods of survival with good health may follow successful treatment of malignant effusions with nitrogen mustard. All patients with effusions due to metastatic malignancies should be given a trial of therapy with nitrogen mustard.

2065 Adelbert Rd. (6) (Dr. Weisberger).

Industrial Health.—Do you want to have the future of medicine directed by, medical opinions rendered by, and evaluations of medical care and service made by personnel officers, safety directors, labor groups, nurses, governmental persons, and plant managers? That is just what is going on now and will be standard practice if the physicians and surgeons in every community do not go into the industrial plants, attend meetings at which relevant matters are discussed, and give constructive (not narrow protective) advice. . . . The industrial nurses recognize the need for proper medical supervision. Some elements of management recognize the need for qualified medical supervision of their occupational health programs. . . . Each one of you have a responsibility for taking another look at yourself. Each of you should look within yourself, too. Is the present motivation of some practitioners selfish, narrow, or short-sighted? Is your motivation lacking in the force that reflects the benefits to be derived from a willingness to understand, cooperate, and look ahead with the people who support you? It is past time when you can be certain of the future unless you are going to participate in your local community industrial situations, in statewide programs, and in national affairs. Things just don't happen —they are the result of someone's efforts . . . you must be ready to contribute and show that the benefits of the future are your business.—E. M. Gunn, M.D., Industrial Health Is Your Business! *Journal of the South Carolina Medical Association*, September, 1955.

METAMINE (TRIETHANOLAMINE TRINITRATE BIPHOSPHATE) IN ANGINA PECTORIS

Harvey L. Fuller, M.D.
and
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Of all the drugs commonly used in the treatment of angina pectoris, glyceryl trinitrate still appears to be, by far, the most effective and most rapid in action. There is a concomitant temporary fall in blood pressure associated with its use and with it a vasodilatation of vessels, including the coronary arteries. With an increase in coronary flow, there is a resultant decrease in preexisting myocardial ischemia in those patients with angina pectoris so treated. Certain undesirable reactions ensuing from the use of glyceryl trinitrate, including diminution of blood pressure and brevity of action, have resulted in a search for nitrocompounds which are devoid of side-effects and have a significantly longer period of action. Many nitrate compounds have been studied, as borne out by the extensive literature on the subject. Shortly before World War II, Junkmann [1] discovered the vasodilating action of Metamine (the biphosphate salt of triethanolamine trinitrate), a white crystalline powder readily soluble in water, with the following chemical formula: $N(CH_2CH_2ONO_2)_3.2H_3PO_4$.

BIOLOGICAL PROPERTIES

Junkmann [1] found that Metamine has the distinct feature of having the same action as glyceryl trinitrate but is both delayed and prolonged in its effect. It, too, has the same pharmacological action as all nitrates, but animal experimentation indicates that its coronary vasodilator effect approximately parallels that of glyceryl trinitrate but is far longer lasting. He experimented on both mice and rabbits, these animals tolerating the drug in large doses. Mice tolerated the drug in doses as high as 100 mg. per kilogram of body weight and rabbits in doses as high as 200 mg. per kilogram. Spühler,[2] Poumailloux and Tetreau,[3] and Bovet and Bovet-Nitti [4] studied the drug in both animals and man, confirming Junkmann's findings as to the low toxicity and coronary dilating action of the drug. Pfeiffer [5] and Gollwitzer-Meier and Kroetz [6] investigated the coronary flow with various drugs of the nitrate series in animals. They found that the effect of Metamine parallels that of glyceryl trinitrate and found that, although the systemic blood pressure changes little with large doses of Metamine, there is a considerable increase of coronary flow by virtue of active dilatation. Pfeiffer [5] feels that Metamine has certain additional advantages not possessed by glyceryl trinitrate, such as an increased oxygen consumption of heart muscle, as well as a reduction of cardiac output and minute flow. He believes that the drug is effective in the relief of myocardial ischemia by coronary vasodilation, increased myocardial oxygen consumption, and reduced cardiac output, although the latter two have not been confirmed. He explains the stationary peripheral blood pressure on a mechanism of compensatory peripheral vasoconstriction.

The most comprehensive and recent animal study of Metamine was carried out in 1951 by Melville and Lu.[7] They initially used the isolated perfused rabbit heart and compared Metamine with glyceryl trinitrate. They reached the following conclusions: 1. Both Metamine and glyceryl trinitrate produce a prompt and immediate coronary vasodilatation, but the duration of the response in the former is longer. 2. Both drugs show approximately equal toxic reactions on the isolated rabbit heart, and there is little difference in the immediate effects of repeated injections of equal doses of the two agents. With glyceryl trinitrate, there appears to be a somewhat greater cumulative depression of both the rate and the amplitude of the contractions than is observed with Metamine. These effects might conceivably influence coronary flow, but the authors conclude that in respect to their vasodilating actions, the two agents are relatively similar. 3. Using anesthetized dogs, the authors show that when 10 times as large a dose of Metamine as glyceryl trinitrate is injected, the depressor effect on systemic blood pressure is still considerably less. In the same experiment, large doses of both drugs administered intravenously produced little change in the electrocardiographic picture. 4. In dog heart-lung preparations, measurements were made to determine effects on cardiac output and heart rate with these agents. The results were similar in each. Doses of 5 to 10 mg. of each agent produce only a brief increase in cardiac output and transient cardiac acceleration. With 2.5 to 10 times this dose, there is only a progressive decrease in output and rate with both agents. 5. The authors tested the acute toxicity of the drugs in rats and rabbits and conclude that glyceryl trinitrate is somewhat less toxic. They demonstrate that the animal recovered after 50 mg. of Metamine per kilogram was given, but a dose of 100 mg. caused a delayed mortality, and 200 mg. per kilogram caused an immediate fatality in the animal.

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These experiments suggested that, like glyceryl trinitrate, Metamine is rather nontoxic to laboratory animals. The authors did not study chronic toxicity of the drug. Merlen [8] studied the drug in dogs, mice, and isolated organs, and the conclusions paralleled those of Melville and Lu.[7]

It has generally been the accepted theory that the vasodilator mechanism of the organic nitrates is due to the release of nitrate ions by hydrolysis. Many investigators, including Krantz and his co-workers,[9] tend to dispute this theory and suggest that the dilator effect of nitrates does not depend exclusively on hydrolysis of nitrate into nitrite ions, and the very rapid effect produced by glyceryl trinitrate and Metamine in Melville and Lu's [7] experiments tend to confirm this. In fact, their in vitro experiments demonstrate that Metamine is much less readily hydrolyzed than glyceryl trinitrate, supporting the view that the drug's effect is as a nitrate, rather than a result of nitrate-to-nitrite conversion. Metamine, they conclude, like glyceryl trinitrate, produces direct coronary vasodilatation. They are, however, unable to explain the fact that, although equally as effective as glyceryl trinitrate as a coronary vasodilator, Metamine is far less effective as a depressor agent. They offer the theory that, since the soluble biphosphate was used in these studies, its greater solubility could be responsible for its greater vasodilator action.

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CLINICAL INVESTIGATIONS OF METAMINE

Spühler,[2] Poumailloux and Tetreau,[3] Pfeiffer,[5] Merlen,[8] Bovet and Bovet-Nitti,[4] Gerstlauer,[10] Dailheu-Geoffroy,[11] and Palmer and Ramsey [12] have all studied the effectiveness of Metamine in selected cases of angina of effort and in severer forms of myocardial ischemia.

Spühler [2] used the drug in 82 patients suffering from varying degrees of coronary insufficiency. He concluded that 35% demonstrated improvement to the degree of freedom of symptoms, 40% were considerably improved, 8.5% showed slight improvement, and 16.5% showed none. He found the drug easily tolerated and side-reactions infrequent. Irritation of the oral mucosa occurred when the drug was chewed, and mild gastrointestinal disturbance was reported. Less frequently, palpitations, flushing, and vertigo were observed. One patient in the series demonstrated an urticarious skin eruption that disappeared when therapy was withdrawn; this patient also was apparently allergic to other drugs of the nitrate and nitrite series. At no time did Spühler detect signs of chronic intoxication with the development of methemoglobinemia or other blood dyscrasias.

Poumailloux and Tetreau [3] investigated Metamine clinically in patients with moderately severe and severe angina, most of whom showed changes in electrocardiographic pattern before and after exercise. They carefully avoided patients having a history of recent myocardial infarction or congestive heart failure. These workers were the first to vary the dosage from 6 mg. up to 12 mg. in divided doses in 24 hours. They also used adjunct therapy, such as sedatives, glyceryl trinitrate, and drugs of the aminophylline series. Their series was small, a total of 18 patients, and results were based on subjective improvement of patients with varying doses of the drug. For controls, they used the same patients, substituting a placebo tablet. They concluded that the drug was most effective in the milder types of angina and that its effect as a coronary vasodilator lasted several days after drug therapy was stopped. They felt that its best value lay in prevention of nocturnal attacks, and the optimum dosage they recommended was between 9 and 10 mg. in 24 hours. They saw no untoward reactions in their series and suggested that, because of this, larger doses might produce better results.

Gerstlauer [10] treated 21 patients with angina pectoris, 13 of whom were considerably benefited by Metamine; he also reported on 2 patients who failed to demonstrate typical electrocardiographic changes after the institution of Metamine therapy in exercise tolerance tests, such changes having been observed prior to the institution of therapy. Merlen [8] used Metamine therapy on eight patients with angina, all of whom presented typical electrocardiographic changes before and after exercise tests. He reported on five with considerable improvement, one with moderate improvement, one with slight improvement, and one unimproved. He also reported the delayed or latent interval from the onset of therapy and after its discontinuance. In the five patients who were markedly improved, a sharp reduction in the number of glyceryl trinitrate tablets used was observed.

Dailheu-Geoffroy [11] reviewed the literature and treated 27 patients for a period of four months. In a total of 24 patients improvement was reported; in 3 patients there was complete failure. It was suggested that the effective duration of therapy with Metamine in dosage of 2 mg. was between two and five hours and that a small concomitant dose of glyceryl trinitrate might be beneficial.

Palmer and Ramsey [12] studied five patients who were considered to have coronary arteriosclerosis, which caused five or more attacks of pain daily and was relieved by rest or glyceryl trinitrate. All patients demonstrated the typical electrocardiographic changes on exercise tolerance testing, and three gave a history of myocardial infarction in the previous three years, but not within six months. Their investigation lasted five months, and the patients themselves were used as controls with the use of placebo tablets. Subjective improvement was noted by all five patients, and each of them, while on therapy of 8 mg. daily of Metamine, demonstrated marked reduction in daily attacks. They reported a lag of at least two days after therapy had been started before improvement occurred and likewise noted a continued benefit two days after therapy was discontinued. One patient developed a coronary occlusion two weeks after drug therapy was stopped, but it was felt this had

8. Merlen, J. F.: Action du biphosphate de trinitro-triéthanolamine dans l'angine de poitrine et l'artérite oblitérante, Thérapie **6**: 223, 1951.
9. Krantz, J. C., Jr.; Carr, C. J.; Forman, S. E., and Ellis, F. W.: Alkyl Nitrites: Pharmacologic Study of New Series of Organic Nitrites, J. Pharmacol. & Exper. Therap. **67**: 187, 1939.
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11. Dailheu-Geoffroy, P.: L'angine de poitrine, étude étiologique, pathogénique et thérapeutique, Vie méd., Aug., 1949; Action comparée de la pentanitrine et des outres vasodilatateurs coronariens dans l'angine de poitrine, Ouest méd., no. 13 (July 10) 1950; Action du biphosphate de trinitro-triethanolamine dans l'angine de poitrine, Clinique **46**: 27, 1951.
12. Palmer, J. H., and Ramsey, C. G.: Triethanolamine Trinitrate (Metamine) in the Treatment of Angina Pectoris: A Preliminary Report Canad. M. A. J. **65**: 17, 1951.

no relation to the drug and its use. These workers did not investigate blood pressure and electrocardiographic changes, nor did they vary their drug dosage in any way. Their final conclusions were that the results so obtained were sufficiently promising to warrant further and more extensive clinical study.

TABLE 1.—*Chart for Recording Data on This Study*

"Metamine" Survey
Experiment No. 5623-7

Patient's Subjective History Date.....

Name..... Address.....

Present Occupation..... Previous Occupation.....Unit No....

Background Information: (Answer Briefly)

1. A. How long have you known of this heart condition?.....
   B. How long have you had these attacks?.....
2. A. Have you ever been hospitalized for heart disease?.....
   B. Have you ever been hospitalized for a very severe attack of chest pain which was relieved by medications?.....
3. Do you have high blood pressure?.....
4. Do you have any shortness of breath on exertion?.....At rest?.....
5. How many pillows do you sleep on at night?.....
   Can you sleep flat?.....
6. Do you have any swelling of the feet or ankles?.....
7. Have you ever had an electrocardiogram?.....
8. Have you ever had an exercise test?.....
9. Have you been forced to change your way of life, job, and or physical activity because of attacks?.....
10. What other physical diseases or ailments do you have?.....
    .....
11. What is the name and address of your present physician?.....
    .....

Information Re Attacks:

1. What is the least amount of effort or exertion that brings on an attack? .....
   .....
2. How often do attacks occur?.....
3. Are they always associated with exertion?.....
4. How much exertion?.....
5. Is it always the same with each attack?.....
6. Do attacks occur without exertion: i. e., sitting in a chair, or lying in bed?.....
7. How severe are the attacks, on the average? (mild, moderate, severe, incapacitating).....
   .....
8. Is there any relationship to: Meals?.....Emotions?.....
   Weather?..... Fatigue?..... Other factors?.....
   .....
9. Where does the pain radiate? Chest?..... Left arm?.....
   Right arm?..... Jaws?..... Shoulders?.....
   Back?..... Abdomen?.....
10. Is the pain always the same?.....
11. Do you take nitroglycerin?..... If so, how many on a good day?..... On a bad day?..... In a week or a month?.....
12. A. Do you now take any other drugs for relief of or prevention of attacks?.....
    B. If so, what drug?.....
    C. How often is it taken?.....
13. A. What drugs have you taken in the past, other than nitroglycerin, for relief of or prevention of attacks?.....
    .....
    B. How do they compare with the drug, if any, you are now taking for that purpose?.....
    .....
14. Do you take any other medications?.....
    (Please describe in detail)
    .....
    .....
    .....

TABLE 2.—*Chart for Recording Data on This Study*

FOR PHYSICIAN'S USE ONLY

Date.....

Name..... Unit No.....

History: (Summary of positive findings)	Physical examination: (Summary of positive findings)
.....	.....
.....	.....
.....	.....
.....	.....

Cardiac fluoroscopy:.....
.....

Electrocardiogram: .....
.....

Exercise test:.....
.....

Other laboratory data:	Date	Results
.....	.....	.....
.....	.....	.....
.....	.....	.....
.....	.....	.....
.....	.....	.....
.....	.....	.....

Cardiac diagnosis:
A. Etiological .....
B. Anatomical .....
C. Physiological .....
D. Functional .....

Date..... By.....

Previous treatment for angina: (enumerate drugs used and in use and their relative effectiveness)
.....
.....
.....

.....M.D.

PRESENT CLINICAL STUDY

In all, 71 patients were studied in the present series. They were obtained from private practices, homes for the aged, and outpatient clinics. Fifty-one had known histories of angina for periods varying from six months to 11 years; 20 patients had never had previous treatment

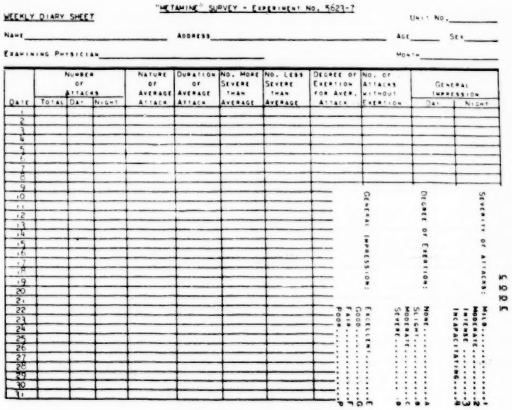
for coronary artery disease. Their ages ranged from 36 to 78 years. Forty-nine were males and 22 were females. All were considered to have arteriosclerotic coronary disease. Twenty-three patients had at one time undergone exercise tolerance tests of varying types and demonstrated the characteristic electrocardiographic changes of coronary insufficiency. Nineteen had one previous attack of myocardial infarction, proved electrocardiographically, but none had a proved infarction within the previous year. Fifty per cent were actively employed in mild sedentary occupations, and the remainder were retired because of age and/or their coronary disease. Nineteen patients were diabetic and under good regulation. Thirty-three were hypertensive or gave a history of hypertension in the past. Patients with known syphilitic aortitis with anginal syndrome were eliminated from the study. Patients whose symptoms were proved or suspected to be purely psychosomatic in origin and in no way associated with coronary artery disease were also eliminated, as were those with preexisting and uncontrolled congestive heart failure.

Each patient studied underwent a complete investigation, recorded on charts prepared specifically for this study (tables 1 and 2). As well as the usual history, specific information relating to this study, with particular reference to the patient's attacks, was recorded. Fluoroscopic and x-ray examination of the heart, electrocardiograms, exercise tolerance tests, and other laboratory data were also recorded. The patient was carefully questioned regarding any previous vasodilator drugs used, including glyceryl trinitrate, their dosage, duration of use, and their effectiveness in the prevention and relief of angina.

The patient was given a daily diary sheet (fig. 1) in which he was instructed to record the following data: (*a*) total number of attacks during the day or waking hours; (*b*) total number of attacks at night or during sleep; (*c*) the nature of the average attack during the day or night; these were graduated as mild, moderate, intense, and incapacitating; (*d*) the number of glyceryl trinitrate tablets taken in 24 hours; (*e*) the duration of the average attack during the day or night; (*f*) the number of attacks felt to be severer than average and the number less severe than average; (*g*) in attacks resulting from exertion, the degree of activity required, graduated as slight, moderate, and heavy; and (*h*) the patient's general impression of each day, with reference to the attacks, comparing it with an average good or average bad day; also recorded was the effect the attacks had on his sleep at night.

At the outset, all patients were divided into three groups as follows: Group A—those on therapy with another long-acting vasodilator for at least three months. Some of these were pentaerythritol tetranitrate, mannitol hexanitrate, erythrityl (Erythrol) tetranitrate, papaverine, and khellin. Almost all of these patients took glyceryl trinitrate along with their long-acting vasodilators. This group includes the severest cases in the series. Group B—patients with milder cases, taking only glyceryl trinitrate either prophylactically or for relief of attacks and who were not taking any other nitrate or nitrite at that time or for three weeks prior to this phase. Group C—patients with mild cases, who were able to control their attacks by mere restriction of activity and who had never been on therapy with any nitrate or nitrite at any time, including glyceryl trinitrate.

Phase 1 (Pre-Metamine Phase).—In order to determine a base line in each case with regard to the number of attacks and the glyceryl trinitrate requirement, these three groups were permitted to carry on as they had in the recent past for a three week period. In each instance the diary sheet was carefully kept and evaluated at the end of the three week phase and the veracity of the diaries investigated.


"METAMINE" SURVEY - EXPERIMENT No. 5623-7

WEEKLY DIARY SHEET

Unit No.

Name Address Age Sex

Examining Physician Month

Date	Number of Attacks: Total	Day	Night	Nature of Average Attack	Duration of Average Attack	No. More Severe than Average	No. Less Severe than Average	Degree of Exertion for Aver. Attack	No. of Attacks without Exertion	General Impression: Day	Night
1											
2											
3											
4											
5											
6											
7											
8											
9											
10											
11											
12											
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26											
27											
28											
29											
30											
31											

General Impression: Poor, Fair, Good, Excellent

Degree of Exertion: Severe, Moderate, Slight, None

Severity of Attacks: Mild, Moderate, Severe, Incapacitating

5065

Fig. 1.—Daily diary sheet.

Phase 2 (Placebo Phase).—In group A, these patients were placed on a three week trial with placebo. This was carried out with caution and the patients were permitted to take as many glyceryl trinitrate tablets as required. Patients severely incapacitated by this step were immediately taken off the placebo regimen and passed on into phase 3 (Metamine phase); in the entire series it was necessary only in 12 patients to follow this change of procedure. In groups B and C the patients were instructed to take the placebo in quantity comparable to what we expected to use later with Metamine. They were informed that it was a new drug whose value for the relief of their symptoms was being tested and that it was completely harmless and might be beneficial. The importance of their own suggestibility was stressed, as was its relative effect on the study. Group B patients were told to take glyceryl trinitrate freely as before. Group C patients were not given glyceryl trinitrate.

Phase 3 (Metamine Phase).—This phase, in the patients in groups B and C, was begun in the seventh week of the study and, in one-third of our patients, has continued for at least six months. The 12 group A patients

whose cases were aggravated by placebo were seen at least once weekly, and the initial dose of Metamine (2 mg. four times daily) was increased until a maximum dosage of 24 mg. daily, in some cases, was achieved. The total daily dose was increased depending on severity of symptoms, number of attacks, and the degree of incapacity. The rest of the group A patients also received gradually increased doses depending on symptoms, but the change in dosage was made at three week rather than weekly intervals. This also applied to groups B and C. The majority of group C experienced no difficulty and continued on therapy of 2 mg. four times daily for varying periods.

EVALUATION

After a review of the patient's diary, the relative effectiveness of Metamine was discussed with the patient at termination of the final phase. No attempt was made to influence the patient to use a vasodilator other than the one formerly used. The final decision was made by the patient himself and his physician.

"METAMINE" SURVEY - EXPERIMENT No. 5623-7

DRUG AND DOSAGE CHART

DATE OF INITIAL INTERVIEW
GRADE OF SEVERITY
PREVIOUS DRUGS

HISTORY No. EXAMINING UNIT
NAME ADDRESS AGE SEX
BRIEF HISTORY (SUMMARY OF POSITIVE PHYSICAL FINDINGS AND LABORATORY STUDIES):

PHASE	DRUG	DOSAGE	NUMBER OF ATTACKS: DAY	NUMBER OF ATTACKS: NIGHT	SEVERITY OF ATTACKS	REACTIONS TO DRUG	COMMENTS	SIGNATURE
PRE-TREATMENT PHASE DATE -								
PHASE I: DATE (wk. 1)								
(wk. 2)								
(wk. 3)								
PHASE II: DATE (wk. 1)								
(wk. 2)								
(wk. 3)								
PHASE III: DATE (wk. 1)								
(wk. 2)								
(wk. 3)								

CODE

SIDE EFFECTS

Skin Rash.....A
Hypotensive Effect.....B
Depressor Effect.....C
Gastrointestinal Effect.....D
Dizziness.....E
Weakness.....F
Others.....G
(Describe)

SEVERITY OF ATTACKS

Mild.....1
Moderate.....2
Intense.....3
Incapacitating.....4

Fig. 2.—Drug and dosage chart.

Each physician was provided with a drug and dosage chart (fig. 2) in which were recorded the various phases; the vasodilator used; the dosage; an average estimate, in the physicians opinion, of the true number of attacks; and severity of attacks. The physician also recorded any side-reactions, both subjective and objective, to any of the drugs used, with particular reference to Metamine, as well as his comments on the patient's veracity and his impression of the results of Metamine therapy. The physician was asked particularly to watch for skin eruptions, severe hypotensive changes and depressor effects, changes in blood picture, and gastrointestinal side-reactions. The physician was also asked his impression of the delayed or latent period of Metamine, both at the beginning and end of its use. A final summation was presented as to the effectiveness of the drug by each physician.

TABLE 3.—*Average Number of Attacks Daily*

	No. of Cases	Phase 1 (Pre-Metamine)	Phase 2 (Placebo)	Phase 3 (Metamine)
Group A	34	11.0	14.2*	5.5
Group B	17	5.5	4.7	2.0
Group C	20	2.0	3.0	1.0
	71	7.1	7.7	3.4

* Twelve patients in this group became too severely incapacitated to continue this phase longer than 7 to 10 days and they have been excluded from this average.

TABLE 4.—*Metamine Dosage and Evaluation*

	No. of Cases	Initial Daily Dose, Mg.	Final Daily Dose, Mg.	No. of Cases: Improved	No. of Cases: Unimproved
Group A	34	8	12-24	29 (85%)	5 (15%)
Group B	17	8	8-20	13 (76%)	4 (24%)
Group C	20	8	8-16	16 (80%)	4 (20%)
	71			58 (82%)	13 (18%)

RESULTS OF THIS STUDY

In general, Metamine was quite successful in preventing attacks of angina pectoris. Tables 3 and 4 demonstrate its effectiveness clearly. Table 3 shows the daily average number of attacks for each group of patients in each phase of the study. The average number of glyceryl trinitrate tablets taken daily by the 42 patients who used this drug throughout the study was 7.0 for phase 1 (pre-Metamine), 9.8 for phase 2 (placebo), and 3.4 for phase 3 (Metamine). (Twelve patients in this group became too severely incapacitated to continue this phase longer than 7 to 10 days and they have been excluded from this average.) Table 4 demonstrates that higher daily dosages of Metamine were required to achieve the same degree of effectiveness in the severer cases. In the entire series, 82% of the 71 patients showed improvement with Metamine.

COMMENT

We are, of course, well aware of the difficulty of evaluating a vasodilator drug in the treatment of coronary artery disease because of the reliance on the method of subjective study. As Russek and co-workers [13] point out, "The inapplicability of animal observation to man, the element of subconscious bias, and the inaccuracy of clinical estimates of coronary reserve and coronary anoxia that are based on the symptom of pain . . ." make a project such as this difficult to evaluate. Russek used the exercise tolerance test as an attempt to avoid these difficulties in carefully selected cases. In the size of our series, such objective testing would be unwieldy and almost prohibitive, and therefore, as with Spühler,[2] Poumailloux and co-workers,[3] Merlen,[8] Dailheu-Geoffroy,[11] and Palmer and Ramsey [12] we were obliged to utilize, as carefully as possible, the patient's own views as evaluated by his physician.

We found that Metamine used in adequate dosage in a satisfactory number of patients effectively reduced the

13. Russek, H. I.; Regan, F. D., and Naegele, C. F.: 100% Oxygen in the Treatment of Acute Myocardial Infarction and Severe Angina Pectoris, J. A. M. A. **144**: 373 (Sept. 30) 1950. Russek, H. I.; Urbach, K. F., and Doerner, A. A.: Effect of Heparin in Cases of Coronary Insufficiency: Evaluation by Electrocardiographic Tests, ibid. **149**: 1008 (July 12) 1952. Russek, H. I.; Urbach, K. F.; Doerner, A. A., and Zohman, B. L.: Choice of a Coronary Vasodilator Drug in Clinical Practice: Evaluation of Effects by Electrocardiographic Tests, ibid. **153**: 207 (Sept. 19) 1953. Russek, H. I.; Zohman, B. L., and Dorset, V. J.: Objective Evaluation of Coronary Vasodilator Drugs, Am. J. M. Sc. **229**: 46, 1955.

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number of anginal attacks, tended to lessen the severity of the attacks, and sometimes prevented them entirely. Each dose, when effective, had an action which lasted from four to six hours. Metamine was not used as a substitute for glyceryl trinitrate, and the study indicated that Metamine used regularly diminished the frequency of use of glyceryl trinitrate.

In regard to dosage, we found the most clinically effective dose in the moderate cases to be 4 mg. four times daily and, commensurate with the severity of the case, the larger doses, when used, demonstrated very few side-effects. In comparison to the other vasodilators, it was apparent that Metamine, milligram for milligram, is more effective in the prevention of angina. The hypotensive action of the drug, in our opinion, is slight, and patients are able to tolerate large daily doses.

CONCLUSIONS

Metamine (the biphosphate salt of triethanolamine trinitrate) is a long-acting coronary vasodilator and is effective in the prevention of anginal pain. In comparison with other vasodilators, it is more effective, milligram for milligram. Intolerance to Metamine is rare. Undesirable side-reactions, such as skin, blood, and gastrointestinal manifestations, are rare. There is a very slight hypotensive effect, which is of no significance clinically. The results obtained are sufficiently promising to warrant further clinical studies in three directions: (*a*) in the prevention and relief of attacks of acute coronary insufficiency, in either oral or parenteral form; (*b*) in the use of the drug in myocardial infarction for the purpose of offsetting reflex coronary vasoconstriction of the unaffected vessels, reducing pain and possibly reducing the extent of the infarction; and (*c*) in investigation with a sustained-release modification of Metamine, with the purpose of prolonging the effect of the drug and reducing the number of tablets that would be necessary for daily medication.

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TRIGEMINAL NEURALGIA

TREATMENT BY SURGICAL DECOMPRESSION OF POSTERIOR ROOT

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Back in 1888 Gowers [1] made some points that one should keep in mind even today when evaluating any procedure for curing trigeminal neuralgia:

> An attempt to estimate the true position of the surgical treatment of neuralgia is unfortunately beset with almost insurmountable difficulties, due to the fact that after many operations the pain has ceased, or been much lessened, for a time, but has afterward returned, and the cases have been published before sufficient time has elapsed to permit an opinion to be formed of the permanence of the effect. Moreover, the numerous cases in which there has not even been temporary relief are seldom published. In some instances, operation after operation has been submitted to by the patient under urgent compulsion of continued suffering, and the records of many cases illustrate very strikingly the need for caution in drawing any inferences from transient relief.

In 1891 Horsley,[2] performing a retrogasserian neurotomy, did an avulsion via the temporal approach, but his patient died seven hours later of shock. The search for surgical relief was continued. In 1901 Spiller and Frazier,[3] of Philadelphia, demonstrated conclusively that there would be no regeneration of the nerve fibers if the trigeminal root was cut proximal to the gasserian ganglion. Consequently, one could obtain a permanent cure. Frazier [4] further demonstrated, in 1925, that a differential section of the posterior root could be accomplished. By this procedure he was able to sever the maxillary and mandibular divisions and to preserve the ophthalmic division and the motor root. Since most neuralgias are confined to the lower two divisions of the trigeminal nerve, this method had a distinct advantage over total section of the posterior root, for it obviated the neuroparalytic keratitis that sometimes resulted after the earlier procedure.

The complications encountered after fifth nerve section have led to efforts to improve on Frazier's method. Sjöqvist [5] reported relief of trigeminal neuralgia by section of the descending tract of the trigeminal nerve in the medulla. This procedure eliminated the paresthesias that occur after nerve section, but it is an operation of considerably more magnitude than a nerve root section via the temporal route, an important consideration when one is dealing with the older patients, who most commonly develop trigeminal neuralgia. Dandy claimed certain advantages for posterior root section by the posterior fossa route. Paresthesias are uncommon when his method is used. He also claimed that the posterior fossa route had a distinct advantage over the temporal approach, since 10% of trigeminal neuralgia was associated with tumors of the cerebellopontile angle. This figure is to high, although such an association does occur. In fact, just such an occurrence led Taarnhøj [6] to an entirely new and different surgical procedure. He had found a small epidermoid tumor in the cerebellopontile angle of a 31-year-old man who was suffering from trigeminal neuralgia. He removed the tumor but was able to preserve

Read before the Section on Nervous and Mental Diseases at the 104th Annual Meeting of the American Medical Association, Atlantic City, June 7, 1955.

1. Gowers, W. R.: A Manual of Diseases of the Nervous System, Philadelphia, P. Blackiston, Son & Co., 1888, p. 1167.

2. Horsley, V.; Taylor, J., and Coleman, W. S.: Remarks on the Various Surgical Procedures Devised for the Relief or Cure of Trigeminal Neuralgia (Tic Douloureux), Brit. M. J. **2**: 1139, 1191, 1249, 1891.

3. Spiller, W. G., and Frazier, C. H.: The Division of the Sensory Root of the Trigeminus for the Relief of Tic Douloureux: An Experimental, Pathological, and Clinical Study: With a Preliminary Report of One Surgically Successful Case, Philadelphia M. J. **8**: 1039, 1901.

4. Frazier, C. H.: Subtotal Resection of Sensory Root for Relief of Major Trigeminal Neuralgia, Arch. Neurol. & Psychiat. **13**: 378, 1925.

5. Sjöqvist, O.: Eine neue Operationsmethode bei Trigeminusneuralgie: Durchschneidung des Fractus spinalis trigemini, Zentralbl. Neurochir. **2**: 274, 1938.

6. Taarnhøj, P.: Decompression of the Trigeminal Root and Posterior Part of Ganglion as Treatment in Trigeminal Neuralgia: Preliminary Communication, J. Neurosurg. **9**: 288, 1952.

the fifth nerve root intact. The patient was completely relieved of pain and remained symptom-free. Taarnhøj then considered just where the fifth nerve could be compressed in the normal course from the emergence of the nerve root at the upper edge of the pons to the emergence from the base of the skull. He decided that compression could happen only at the point where the nerve enters the dural envelope, which covers a part of the posterior root and the gasserian ganglion at the apex of the petrosal bone. He then attempted to cure a patient of typical trigeminal neuralgia simply by opening the dural sheath over the posterior root and leaving the root completely decompressed. He accomplished this by an intradural temporal fossa exposure. In May, 1952, he reported on eight patients whom he had treated in this fashion. All patients had had relief of pain. The same procedure has been done extradurally by Love, Gardner, and others, with equally good immediate results.

ETIOLOGY

The etiology of trigeminal neuralgia continues to be unknown. The disease occurs most commonly in the sixth, seventh, and eighth decades of life. It is rare in persons under 30. Women have the disease slightly more frequently than men, and it is commoner on the right side than on the left. The mandibular and maxillary divisions are commonly involved; the ophthalmic division is seldom affected.

For the past half-century little thought had been directed to the cause of trigeminal neuralgia. Surgeons had been content to develop the techniques of posterior root section and had almost lost sight of the phenomenon of cause and effect. Taarnhøj [6] changed all of this. He considered that some form of nerve root compression must be operative and on that assumption obtained relief for his patients. Others have contended that the relief resulted simply from trauma in and about the region of the posterior root. Shelden [7] has been content to expose the gasserian ganglion and merely to traumatize it, not decompressing the posterior root. Schwartz [8] has opened the dural covering of the gasserian ganglion and lifted the nerve fibers out of the cavum mecklii. Most of their patients have had relief. Gardner [9] has tried to explain the mechanism of trigeminal neuralgia. As one ages, he believes, there is a relative basilar impression, or mild form of platybasia, in which the petrous tips are pushed upward. He has shown that a significantly large percentage of his patients had a higher petrous tip on the side of the neuralgia than on the opposite side, as measured by anteroposterior roentgenograms of the skull. As the petrous tip is pushed upward, the posterior root of the fifth nerve is stretched. Gardner further believes that there is a short circuiting of the nerve fibers at the point where the posterior root passes beneath the petrosphenoid fold in the dura. He postulates parasympathetic fibers in the fifth nerve and a short circuit between these and the sensory fibers. He has adduced interesting experimental work on cats to support his thesis of a short circuit. Love [10] and the Mayo Clinic group concluded that trauma is not a factor. They found no appreciable difference in the recurrence rate between the patients who had hypesthesia (i. e., evidence of operative trauma to the nerve root) and those who had no hypesthesia.

Furthermore, I have had three patients who had differential sections of their posterior roots for mandibular and maxillary division neuralgias, with relief of pain for two years in two patients and three years in the other. The pain subsequently returned in the ophthalmic division in all three. As will be indicated below, under Results, all three of these patients have obtained relief of their ophthalmic branch neuralgia by means of decompression procedure. Trauma may be a factor in relieving neuralgia, but any surgeon who has had experience with the differential section knows that the trauma involved in sectioning the lower two branches is not sufficient to insure permanent relief in the ophthalmic division.

SYMPTOMS AND SIGNS

Trigeminal neuralgia is initiated by sudden, severe, lancinating pains occurring in one or more divisions of the fifth nerve. This pain rarely, if ever, crosses the midline. When an attack of trigeminal neuralgia strikes a patient, he usually stops what he is doing. He holds the side of his face and waits for the pain to stop before continuing his activity. Often there is a trigger area at the vermilion border of the upper lip. Pain is set off when one touches this trigger point with hand or food. Consequently, some patients have great difficulty in eating. Some, because they cannot bear to wash the face, appear with one division of the facial area unwashed or, if they are men, unshaven. The pain usually vanishes as suddenly as it appeared. There is no hypesthesia or anesthesia. The attacks are commoner in the daytime than at night; rarely do they keep the patient awake. Between attacks, when the patient demonstrates his pain to the examiner, he usually points with one finger to the course of the pain. One should doubt the diagnosis of trigeminal neuralgia when the patient shows the course of his pain by laying his whole hand on the side of his face. Although these attacks may come at any time of the year, they seem to be commoner in the spring and fall, in times of changing weather, than at other periods.

DIFFERENTIAL DIAGNOSIS

The diagnosis and differential diagnosis of trigeminal neuralgia are made by exclusion and by history only. There are no abnormal physical findings. One should always consider the Costen [11] syndrome, and one should x-ray the mandibular joint. Usually one can make the diagnosis of Costen's syndrome by inspecting the mouth. A patient who has long been without the posterior molars, of either the upper or the lower jaw, should have his bite mechanism corrected.

The pain of temporomandibular joint disease is more diffuse than that of trigeminal neuralgia. The joint is tender. There is pain over the origin of the temporal

7. Shelden, C. H.: Surgical Decompression in the Treatment of Trigeminal Neuralgia, read before the Harvey Cushing Society, Santa Fe, N. Mex., May 7, 1954.

8. Schwartz, H. G.: Gasserian Gangliolysis for Trigeminal Neuralgia, South. M. J. **48**: 189, 1955.

9. Gardner, W. J., and Pinto, J. P.: The Taarnhøj Operation: Relief of Trigeminal Neuralgia Without Numbness, Cleveland Clin. Quart. **20**: 364, 1953.

10. Love, J. G., and Svien, H. J.: Results of Decompression Operation for Trigeminal Neuralgia, J. Neurosurg. **11**: 499, 1954.

11. Costen, J. B.: The Present Status of the Mandibular Joint Syndrome in Otolaryngology, Tr. Am. Acad. Ophth. **56**: 809, 1951.

muscle. Quite often the pain can be relieved by inserting rubber corks between the posterior molars and having the patient bite down and close the jaws, thus pulling apart the articulating surfaces of the temporomandibular joint. Such relief is uncommon in trigeminal neuralgia. For my part, a person has trigeminal neuralgia, not temporomandibular joint syndrome, if he complains of sudden, severe, lancinating pain which he has had over a period of years and if his dentist has done considerable manipulation of the temporomandibular joint. Usually the two conditions can be definitely differentiated, and there is little point in subjecting the patient suffering from definite severe trigeminal neuralgia to further manipulations of the temporomandibular joint mechanism. It is becoming increasingly clear that the differential diagnosis of trigeminal neuralgia and the temporomandibular joint syndrome should be made more frequently. It should not be necessary to tamper with the bite mechanism of every patient with typical facial neuralgia. Naturally, a set of bite-raising appliances will bring relief for a while, but not for long. Making such appliances takes time; and, if one waits long enough, as in the medical treatment with stilbamidine or cyanocobalamin (vitamin B_{12}), the pain will temporarily subside. Surgeons are now operating on many patients on whom these bite-opening techniques were applied. Had therapy been directed at the posterior root in the first place, the patients would have been spared a great deal of time, money, and excruciating pain.

Sinus disease may cause attacks similar to those typical of trigeminal neuralgia. Roentgenograms should be taken of the sinuses of every patient suspected of having trigeminal neuralgia to rule out such conditions as acute and chronic sinusitis and carcinoma involving the mucosa of the sinuses. Tumors invading the floor of the skull from the nasopharynx may cause pain similar to that typical of trigeminal neuralgia. However, this pain is usually constant and is accompanied by paralysis of the nerve and anesthesia of the corresponding area. Tumors of the cerebellopontile angle usually have other accompanying neurological signs, such as deafness, tinnitus, and vertigo.

Migraine is usually characterized by visual symptoms and is prolonged, although limited to one side. Histaminic cephalalgia, involving the whole side of the face, occurs commonly at night. It is characterized by unilateral lacrimation and nasal discharge on the side of the pain. It is very difficult to confuse this disease with typical trigeminal neuralgia. This pain can be brought on by subcutaneous injections of histamine and is relieved by injections of epinephrine.

CONSERVATIVE THERAPY

Stilbamidine has recently been reported by Smith and Miller [12] as having a beneficial effect upon the course of trigeminal neuralgia. Nearly every patient with trigeminal neuralgia who has entered my office recently has carried a clipping from the local newspaper or a recent copy of *Time* describing the wonders of this form of therapy. On reading the article, one finds that the drug was given over a period of one week and then discontinued. The pain usually subsided about a month later. Had sterile water been used, one could predict approximately the same results. Trigeminal neuralgia commonly comes and goes, and *post hoc, ergo propter hoc* reasoning has led to marvelous cures being ascribed to a great many drugs.

Trichloroethylene was used by Plessner,[13] and it has given relief in certain instances. During World War I it was discovered that some persons who had been working with trichloroethylene in German aircraft factories had developed unilateral paralysis of the trigeminal nerve. Trichloroethylene was used for relieving trigeminal pain, and in a small percentage of patients did give temporary relief.

A considerable degree of success has been claimed for cyanocobalamin,[14] given by mouth or, preferably, in massive injections intramuscularly. Virtually every patient on whom I have operated has been given multiple massive injections of cyanocobalamin. Usually they have given temporary relief. I believe that cyanocobalamin will eventually go the way of typhoid vaccines, smallpox vaccines, and all the other medical treatments that thus far have been brought forth in the therapy of this disease, for trigeminal neuralgia lends itself beautifully to statistical analysis. The disease comes and goes. Therefore, whatever agent is used, if it is used long enough, the neuralgia will spontaneously disappear for a time at least. Whether the agent is cyanocobalamin or sterile water, the result will be about the same, I think, for the patient attributes his relief to whatever he has been doing or taking just before the attacks disappear.

Certain other measures have been advocated and carried out in the past for patients with trigeminal neuralgia. In some clinics alcohol injection has been used before nerve section to accustom the patient to the numbness and paresthesias that he may experience after nerve section. In my opinion, alcohol injection is a difficult procedure, which carries considerable discomfort to the patient. It should be limited to patients for whom no surgical therapy can be advised—persons so debilitated and so old that any surgical procedure is prohibited. Furthermore, certain difficulties with alcohol injection make its use prohibitive. A patient with genuine trigeminal neuralgia almost certainly will come to surgery sooner or later. If a good result is accomplished with alcohol injection, the fibers of the gasserian ganglion are matted together and scarred by the alcohol. Such matting and scarring make it very difficult for the surgeon to accomplish an accurate differential section or a decompression of the posterior root. Furthermore, alcohol injection rarely, if ever, cures the disease. Avulsion of the peripheral portions of the nerve at the supraorbital, infraorbital, or mental foramen has been practiced. Its most important use is in patients whose trigeminal pain originates in the ophthalmic division. Avulsion of the peripheral branch is purely a temporary measure, as the pain usually recurs within six months.

12. Smith, G. W., and Miller, J. M.: The Relief of Tic Douloureux with Stilbamidine, Ann. Int. Med. **38**: 335, 1953.
13. Plessner, W.: Über Trigeminuserkrankung infolge von Trichloräthylenvergiftung, Berlin klin. Wchnschr. **53**: 25, 1916.
14. Surtees, S. J., and Hughes, R. R.: Treatment of Trigeminal Neuralgia with Vitamin B12, Lancet **1**: 439, 1954.

OPERATIVE PROCEDURE

The operative procedure is done extradurally through the temporal fossa, in the same manner as the posterior root section. A decompression incision is made anterior to the ear and just above the malar arch (fig. 1). The temporal muscle is incised and separated. A perforator opening is made into the temporal bone and enlarged to

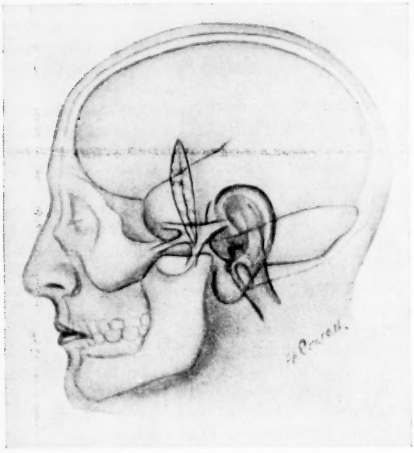

Fig. 1.—Location of incision for decompression procedure.

a little more than the size of a quarter. The dura is then separated from the floor of the temporal fossa. The middle meningeal artery is coagulated and cut at the foramen spinosum. The mandibular division is then identified and injected with procaine containing a minute amount of epinephrine. The dura is then separated farther up over the gasserian ganglion to expose the dural covering of the posterior root, where it is reflected from the dura proper. This point occurs at the petrosphenoid ligament.

This procedure usually involves considerably more bleeding than did the old procedure of simply cutting the posterior root. When the posterior root is completely exposed, there is often considerable bleeding from the superior petrosal sinus and at the upper edge of the posterior root from the cavernous sinus. I have found this bleeding fairly easy to control using absorbable gelatin sponge U. S. P. (Gelfoam). When all bleeding has been controlled, an incision is made in the dura over the ganglion proper from the maxillary division back into the posterior root.

Then the petrosphenoid ligament is caught with small dural scissors and cut. The posterior root is completely decompressed, and one may look directly into the posterior fossa at the emergence of the fifth nerve from the anterior border of the pons (fig. 2). This view has the merit of enabling one to determine whether any tumor is present in the cerebellopontile angle, such as a tumor originating from the eighth nerve. After the nerve root is completely decompressed, a small piece of the gelatin sponge is placed over the decompressed area and the dura of the temporal fossa allowed to fall back in place. The wound is then closed in routine fashion.

RESULTS

I have carried out the foregoing operative procedure on 45 patients with severe trigeminal neuralgia. Subsequent results are as follows: No patient has died. Twenty-one, or about half, have had some hypesthesia on the involved side. This has lasted for three to six months. Forty-two patients have had complete and lasting relief of pain for two months to three years.

One patient showed fair results, but there has been some return of her trigeminal pain, although it has not been as severe as that before the operation. This person is not yet willing that her posterior root be cut. In one patient I was unable to separate the dura from the root and gasserian ganglion proper, and I had to cut the entire posterior root. A third patient had had a cerebrovascular accident on the side of her neuralgia. She had many complaints, such as dizziness and headache, besides her shooting neuralgic pain. Decompression of her gasserian ganglion and posterior root gave relief from her sharp, shooting pain; but, because she had no relief from her headaches and from her other difficulties, she accounted the operation a failure. Since then she has undergone a course of electric shock, and her family physician reports that she is much better. She, likewise, has normal sensation of the involved side of her face.

I have had three patients on whom differential sections had been performed previously. Results were good for two years in two of them, for three years in the other. Then their pain returned in the ophthalmic division. I sectioned the petrosphenoid ligament and dura over the posterior root. The procedure subsequently relieved their trigeminal pain while maintaining the continuity of the

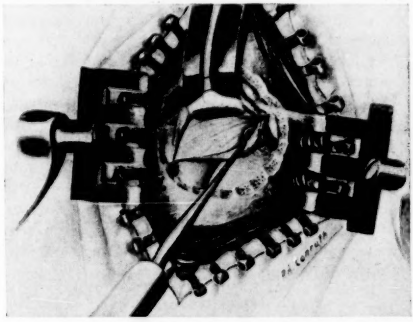

Fig. 2.—Gasserian ganglion and posterior root decompressed.

ophthalmic division. Pain lasted for six days after operation in one of these patients before it subsided. She has had no further episode in two years.

In this series of 45 patients, 3 have had temporary minor paralysis of their fourth nerve. These paralyses have cleared within six months. Temporary paralysis of the facial nerve, which has occurred in the past after the

section of the trigeminal nerve, occurs about as frequently after this decompression procedure as after the old nerve-cutting procedure. So far as I know, there is no reason accounting for this paralysis. One of the three patients with peripheral paralysis of the seventh nerve responded well to cortisone. The other two responded poorly. In the patient who appeared to be benefited, the paralysis cleared completely in two weeks.

COMMENT

Taarnhøj has reported on 118 patients followed for from one to 43 months after operation. Two had no relief of pain. Further surgical intervention was necessary for relieving pain in eight patients: exeresis of the infraorbital nerve in one; posterior root section in one; a second decompression in six. One of these patients with a second decompression had further pain, and a posterior root section was necessary. Seventeen patients had some peculiar feelings, as if they were going to experience an attack, but had no further neuralgic pain. Fourteen had some uncharacteristic discomfort of the face.

In an earlier report, Taarnhøj [15] had divided persons with facial pain into three groups: those with typical trigeminal neuralgia, those with atypical trigeminal neuralgia, and those with atypical facial pain. Of 43 patients with typical trigeminal neuralgia, 4 had recurrences after decompression, 3 a few minor attacks, 3 some uncharacteristic pain, and 33 no pain. Reoperation was done in three patients—a second decompression in two, and root section in the third. Of the 27 patients with atypical trigeminal neuralgia, 15 obtained relief, and 12 had further difficulty. Two required an operative procedure. Of the six patients with atypical facial pain, three had no relief, two had recurrences, and one had relief of pain. Cleveland [16] has done the decompression procedure on 47 patients for primary trigeminal neuralgia. He has had to reoperate on five and do posterior root sections. In a series of 100 patients treated by the extradural approach described by Love,[17] 58 patients obtained relief of pain, 31 had recurrence of pain, and for 11 the results were indeterminate. Of the 31 patients with recurrence of pain, 8 have had posterior root section, 4 have had alcohol injection, and the others have carried on without further intervention. Love does not indicate the types of neuralgias treated, i. e., whether some were atypical or not. In an earlier report, Love and Svien [10] analyzed a group of 10 patients who did not get relief and stated that "most of these did not have real typical trigeminal neuralgia." This group of 10 patients occurred in a series of 39 patients. Abbott [18] has done 23 decompression procedures, with recurrences in 2 instances.

I cannot account for the fact that trigeminal pain has recurred in just one of my patients. In one detail only has my operative procedure varied from that performed by the foregoing authors: I have sectioned the dura over the gasserian ganglion as well as over the posterior root. I hardly believe that this modification could account for lack of recurrences, but it could lend credence to Shelden's [7] theory that all that is necessary for relief of trigeminal neuralgia is a certain amount of trauma to the fibers as they pass through the gasserian ganglion.

Secondly, I have tried to limit the procedure severely to patients in whom there was no question about the diagnosis. All of these patients had sudden onset of sharp, lancinating pain that radiated over one or more divisions of the fifth nerve and then ceased just as suddenly. In only one instance was there any question as to the diagnosis. This was the third patient I mentioned —the one with several complaints other than her trigeminal neuralgia.

This patient raises the subject of atypical trigeminal neuralgia. I believe that there is no such thing. Either a patient has trigeminal neuralgia, which is a definite and typical syndrome characterized by sudden onset of sharp, shooting pain that ceases suddenly, or he does not have trigeminal neuralgia. I think that this patient did not have trigeminal neuralgia. Such patients do poorly no matter what surgical procedure is used on the fifth nerve. In my experience, the patients who did poorly with nerve root sections for their supposed trigeminal neuralgia were the ones for whom the diagnosis was in doubt.

There is one danger in the decompression procedure as I now see it. Because these patients can now be operated upon with little or no neurological deficit, the procedure may be more of an invitation to operation than was the old operation of nerve root section, with its possibility of paresthesia and with its definite anesthesia in the area involved. This procedure should not be used on persons with atypical neuralgias. It should be reserved for only those persons who have definite trigeminal neuralgia until it can definitely be evaluated. Results reported by Taarnhøj and Love support this contention.

It is still too early to evaluate this procedure finally. There currently is a good deal of discussion in neurosurgical circles over whether or not the relief obtained in these patients will be permanent. It seems to me that this discussion is now entirely academic and that the procedure should be done on patients with trigeminal neuralgia. Neurosurgeons are now at the same point with this procedure that Spiller and Frazier [3] must have been about two years after their first section of the posterior root for trigeminal neuralgia. They must have had some doubts as to whether or not the cure of trigeminal neuralgia by posterior root section would be permanent. The only way to tell whether the relief will be permanent is to do the operation and then await results. Obviously, only time will tell; but, in fairness to the patient, he should be given the benefit of this procedure, which will leave him with no neurological deficit, no loss of sensation in the face, and no paresthesias, in preference to the nerve-severing operation, until the nerve-severing operation becomes necessary.

Recurrences in the ophthalmic division after differential section of the maxillary and mandibular divisions constitute a very important argument in favor of the decompression procedure of Taarnhøj. Likewise, for persons having primary neuralgia of the ophthalmic

15. Taarnhøj, P.: Decompression of the Trigeminal Root, J. Neurosurg. **11**: 299, 1954.
16. Cleveland, D.: Personal communication to the author.
17. Love, J. G.: The Surgical Treatment of Trigeminal and Glossopharyngeal Neuralgia: Decompression of the Gasserian Ganglion and Its Root for Trigeminal Pain, J. Internat. Coll. Surgeons **21**: 1, 1954.
18. Abbott, K. H.: Personal communication to the author.

branch, the decompression procedure should certainly be the procedure of choice before nerve-cutting techniques are resorted to. None of these patients has had paresthesias of the type formerly seen with nerve-severing techniques. There have been no instances of neuroparalytic keratitis.

SUMMARY AND CONCLUSIONS

The decompression procedure of Taarnhøj will relieve trigeminal neuralgia. It is too early to be able to say how many patients undergoing such decompression will have to be subjected to nerve root section for final relief of pain. Until the procedure can be finally evaluated, the decompression procedure seems preferable to nerve-severing techniques. The Taarnhøj procedure is the surgical procedure of choice in persons presenting neuralgia of the ophthalmic division, whether a recurrence following differential section or a primary neuralgia of the ophthalmic branch. Paresthesias found in nerve-severing techniques are absent in this procedure. Neuroparalytic keratitis is avoided, and this point is of particular importance in persons with primary ophthalmic branch involvement.

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TEACHING LEGAL MEDICINE IN THE UNDERGRADUATE MEDICAL CURRICULUM

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In the past years a great deal of emphasis has been placed on improving the existing coroner's system in this country to render better scientific investigation in deaths due to homicidal, traumatic, and unexpected natural causes. It has also been repeatedly stated that, in order to serve the community more effectively in matters pertaining to public safety and justice, the medical profession must take a more active role. This can be accomplished by the medical profession by proper technique and interpretation of medicolegal autopsy findings, including histological and bacteriological examination of the tissues, toxicologic examination of fluids and tissues, keeping adequate records admissible as evidence in the courts, assisting various branches of the law-enforcing agencies in the detection and deception of crime, and cooperating with the specialists in the fields of forensic psychiatry and immunology and the legal profession. In order to achieve these objectives, as well as to make available physicians who will have this information and experience to assist the coroner's and medical examiner's offices, we must have an educational program at the undergraduate teaching level. With a program recommended by the Committee on Medicolegal Problems of the American Medical Association to be considered in the curriculum of our medical schools, we will have a foundation for study and subsequent implementation of courses at the graduate and postgraduate levels. In this manner we, as physicians and as citizens, will render service to science, to law and justice, and to the community.

It is not my objective at this time to discuss the relative merits of the coroner's versus the medical examiner's system. The medical examiner's office in the few communities where it is now in operation is well organized, efficient in its scientific operation, and has contributed to the benefit of science, law-enforcing bodies, and the community. These offices are well staffed with competent pathologists and toxicologists and have contributed much in the field of research. Cleveland, Los Angeles, San Francisco, and New Orleans are isolated examples of places where the coroner's office has performed its function comparable to that of the medical examiner's office. There are other areas where changes in the scientific operation of the coroner's office are contemplated to meet the progress made in scientific and medical advancements. However, the majority of counties in this country operating under the existing coroner's system are inefficient. This may be partly attributed to the political aspects of this office and to the lack of informed and competent medical assistance to render effectively the service that the coroner's office requires. It makes little difference how the office is designated, but its proper functioning is dependent on competent scientific assistance. Such a program can only be achieved by the introduction into the medical curriculum of a teaching program in legal medicine.

WHAT HAS TAKEN PLACE

In European universities legal medicine has been included in the curriculum for more than a century. In the United States the first lectures on legal medicine were given by Benjamin Rush in 1811 at the University of Pennsylvania. In 1814, J. S. Stringham was the first professor of medical jurisprudence in the College of Physicians and Surgeons of New York. Since then there have been outstanding contributions by various physicians and scientists pertaining to legal medicine, and a considerable amount of research has been done by individual investigators in forensic pathology, toxicology, and immunology.

One might make an erroneous conclusion from this observation that we in the United States have made strides in teaching legal medicine to our medical students, thus preparing our doctors to be of service to the community in the application of law and justice. In fact we in this country have been derelict in the teaching of legal medicine in our medical schools in comparison to the European universities. Kozelka [1] says, "While the

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1. Kozelka, F. L.: Legal Medicine in the United States, Ciba Symposia **11**: 1305 (Winter) 1950.

technological aspects of legal medicine have made phenomenal strides, the teaching of legal medicine in our universities and the implementation of this knowledge by adequate legal procedure has lagged lamentably. The early established medical institutions accepted the dictum that the function of medicine is not limited to the knowledge and cure of disease but comprises also the very important mission to protect life and property and to detect fraud and guilt. The teaching of legal medicine is generally limited to a one or two credit optional course and as a result the practicing physician is not prepared to perform one of his important functions in the community."

The physician engaged in general practice or one who specializes in a specific branch of medicine is called upon to render service in matters pertaining to public safety. The increasing complexity of civilization, the problems presented by congested urban areas, and our age of technocracy present an opportunity and a challenge for the integration of the medical sciences and law. In the administration of justice and in the enforcement of the law of the land, particularly as it applies to the forensic sciences, the physician must assume his responsibility as a citizen and as a responsible person who may be required to furnish medical evidence. Forensic medicine, or legal medicine, is that portion of medical knowledge that may be of assistance in serving the needs of law and justice. It is often thought of as concerning the medical aspects of criminal offenses, but it is also called on to render assistance in the adjudication of cases involving life and accident insurance, industrial compensation, soldiers' rehabilitation, and other civil court actions. Since medical evidence is very vital in the administration of justice, Moritz [2] has indicated very definitely that "Only a physician can supply the critical evidence required if justice is to be based on truth." This educational program should not begin at the graduate or postgraduate level but should be instituted in the undergraduate training curriculum.

REASONS FOR TEACHING LEGAL MEDICINE

In 1931 Dr. C. W. Muehlberger and I [3] inaugurated a 16 hour program in legal medicine at the University of Illinois College of Medicine. The subject material and demonstrations were in many regards similar to those reported in the recent survey of the Committee on Medicolegal Problems of the American Medical Association.[4] This survey reported that only 16 schools in this country offered adequate instruction in legal medicine. Our course was given to the senior medical students, and, since it was an elective course, it was limited to twenty-five students. Experts in forensic pathology, toxicology, immunology, psychiatry, law, and police sciences participated in this program. Other medical and law schools in our area adopted a similar program. Unfortunately, in recent years the subject of legal medicine has been discontinued from the curriculum in our medical schools in Chicago. Only 12 medical schools (Harvard, Tufts, Boston, Maryland, Virginia, Yale, Vermont, College of Medical Evangelists, University of Southern California, University of California in Los Angeles, University of California in Berkeley, and the University of Rochester) have required courses in legal medicine in the United States. Every medical student and physician should receive information in (*a*) what constitutes a coroner's or medical examiner's case and the manner for investigating the cause of death; (*b*) forensic pathology and the study of unexpected death and the problems encountered in the similarity and differentiation of traumatic and homicidal deaths; (*c*) forensic toxicology and the pathological changes that may result; (*d*) forensic immunology and the application of blood groups and serology in the detection of crime; (*e*) the application of forensic psychiatry in medical and legal practices; (*f*) demonstrations by law-enforcing bodies in the techniques used in crime detection and deception; (*g*) the importance of medical records in courts; and (*h*) the doctor as a medical expert witness.

All of these are basic materials of general interest and importance to every physician. Let us not overlook the fact that every patient under study by a physician in his office or hospital may be a potential medicolegal problem. Any accident, industrial or otherwise, or inhalation of noxious agents, may result in immediate or delayed injury resulting in inability to continue to work, or death. The physician in attendance in this instance can supply valuable information in the interest of public safety and justice. Any and all cases of accident, homicide, suicide, or attempted suicide first seen by the physician require not only knowledge in medical management but also his interpretation of the findings and his assistance in the administration of justice.

There are many examples one can cite to illustrate further the reasons why the medical student and physician should have this type of knowledge. Sudden and unexpected deaths present a challenge to every physician. What are the underlying anatomic changes that bring this about? Anesthetics and mismatched blood given in transfusions cause reactions; a patient in the hospital who is permitted to go to the bathroom suddenly collapses and dies; infants and children are found dead in their cribs; someone who receives a superficial bruise or who has eaten food that he claims gave him heart burn dies suddenly. The lay person is unable to comprehend these unexpected and sudden changes that affect members of their families, and quite often the physician is bewildered and can offer no explanation. I recall an episode where a patient was hospitalized because of anginal pains. According to the attending physician, the patient was progressing well, and he assured the patient and the family that within a few days the patient could go home. Then one day the patient experienced sharp substernal pain, developed a shock syndrome, and within 15 minutes died. The attending physician was in a predicament to explain to the family the sudden and unexpected death of the patient. The doctor did not know what had taken place; he was accused of negligence in the management of the patient and was threatened with a court suit for malpractice. Fortunately,

2. Moritz, A. R.: Scientific Medicolegal Investigation in the Undergraduate Medical Curriculum, J. A. M. A. **158**: 243 (May 28) 1955.

3. Levinson, S. A., and Muehlberger, C. W.: Introductory Course in Legal Medicine for Medical Students, J. A. Am. M. Coll. **9**: 293 (Sept.) 1934.

4. Regan, L. J.: Physician and Patient, J. A. M. A. **158**: 255 (May 28) 1955. Hall, G. E.: The Physician and the Law, ibid. **158**: 257 (May 28) 1955.

an autopsy was permitted, and it revealed a spontaneous rupture of the heart and hemopericardium. The attending physician now had the information, from the autopsy findings, to interpret to the patient's relatives the cause for the sudden and unexpected death. Also these findings prevented the alleged malpractice suit.

INSTITUTES OF LEGAL MEDICINE

A great deal of emphasis has been given to efforts to improve the existing coroner's and medical examiner's offices. There is a need for trained forensic pathologists and toxicologists. Since many of the states do not have available pathologists, especially those trained in forensic pathology, the coroner's and medical examiner's offices must rely on practicing physicians to assist them in investigating deaths and, when indicated, in performing autopsies. In the interest of public welfare and health and criminal justice, the general pathologist and particularly the general practitioner who accepts such functions must appreciate what his responsibilities are in medicolegal problems. Where can such a training program be obtained? Where can one receive graduate and postgraduate work in this field? What areas and institutions are available where one may go for study and research, particularly if one desires to become a specialist in legal medicine?

In the United States there are no institutes of legal medicine comparable to existing institutes on the continent. There are isolated areas in large cities where the medical examiner's and coroner's office, in affiliation with medical schools, can offer a training program to physicians in advanced forensic pathology and toxicology. These are excellent training centers and are responsible for many of the highly trained specialists in these fields who have obtained positions in other localities. If we had institutes of legal medicine in areas where there are medical centers, we could coordinate and integrate the facilities available as well as the services of teachers and experts in the various branches of the forensic sciences, and we would have at all times an active teaching program in legal medicine. Institutes of legal medicine would be the center where physicians and lawyers could go for refresher courses and advanced study. Such institutes would become centers not only for the careful prosecution of necessary public work but also for the postgraduate training program of medical examiners and coroners' physicians and for the furtherance of medicolegal research.

Institutes of legal medicine would also be the centers of greatest service to their communities. In this country where we have made tremendous strides in industrial developments, we have stressed safety measures to the employees, but how much more effective this would be if industrial plants would utilize the institutes of legal medicine for study and demonstrations. In the Medicolegal Institute in Vienna there were demonstrations and exhibits illustrating the various aspects of electropathology, pneumonoconiosis, the effects of noxious agents, inhalation of dust and fumes, carbon monoxide intoxication and poisoning, alcoholism, lead poisoning, and the pathology of sudden, unexpected, and traumatic deaths. Housewives were invited to visit the institute to witness demonstrations of various electrical household equipment illustrating the dangers of faulty household gadgets and how to recognize them and thereby avoid accidents. There were also exhibits of medicine cabinets containing drugs showing accessibility of these to children, the effect drugs may have when ingested, how to prevent these occurrences, and what first-aid measures to give. One can visualize readily the effectiveness of such a program in the community, the benefits derived by industry, and the contribution to public health and safety.

In a few areas the medical examiner's and coroner's office have inaugurated on a limited scale some of the contributions offered by the continental institutes of legal medicine. The first chair of legal medicine in this country was at Harvard University. Innumerable contributions to legal medicine have come from the medical examiner's office. The investigations of T. Leary on coronary arteries and unexpected deaths due to heart disease have shed invaluable light on the physiology and pathogenesis of this condition. Our knowledge of radium necrosis of bone has been advanced by the researches of H. Martland. Others, independently interested in forensic science, have contributed important data to this field. The research of Ludvig Hektoen in immunology and K. Landsteiner in forensic immunology and blood grouping are classic contributions. The studies by LeCount, Moritz, and associates on the physiology and pathology of the effect of physical agents and trauma to the body and reports by others working in the fields of forensic pathology, toxicology, and psychiatry have been of immeasurable value.

It is clear that the establishment of institutes of legal medicine in association with medical teaching centers, and in urban areas with teaching hospitals, under the direction of competent, trained personnel would be an outstanding contribution to society. The result would be a more thorough and intelligent investigation of crimes and deaths due to violence and other undue means. It would mean better safeguarding of the rights of the accused individual. From the educational standpoint, such institutes would become centers for the training of physicians and for postgraduate study for specialists in legal medicine where lawyers and ancillary groups in crime detection and deception would assist one another in the prosecution of public safety and criminal justice

MEDICINE AND LAW

The Bible relates an interesting story about two brothers, Cain and Abel. It appears that Cain for various reasons decided to kill his brother Abel. He planned the killing of his brother so that it would appear as an accident. He succeeded in his plans but was apprehended and punished. Here is an example of murder that was the culmination of envy, jealousy, and revenge, an interlocking of psychoanalytic intrigues with a personal justification for the destruction of a man. There are numerous examples of homicide, justifiable or otherwise, in pre-Biblical and post-Biblical times. But it required one of the commandments, "Thou shalt not kill," to direct attention to the injustice of homicide in order to stabilize man in his communal environment and to make justice prevail. In the centuries that followed the legalistic thinking of reason against passion in the various patterns of our socioeconomic existence, the formula of

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reason invariably followed passion. If justice or righteousness is the ultimate end of law, a concept that was recorded in the book of Leviticus and was developed by Greek writings and influence, it reached its zenith when Thomas Aquinas considered it a basic principle in theology. It permeated the philosophical systems of "natural law" and was independent of time and place; it was always the same everywhere. This concept provoked a feeling of passive admission adhering to an admissible standard of natural laws. But to appreciate the significance of justice there must be aroused in people the sense of injustice, a positive and active realization of a condition and not a fanciful hypothesis. Many examples can be cited to illustrate this idea, but the commandment "Thou shalt not kill" not only indicated the processes of justice in the event of homicide or murder but the tribulations of injustice. Professor Cahn [5] summarizes this succinctly: "Justice means the *active processes* of remedying or preventing what would arouse the sense of injustice."

We, as citizens and as physicians, owe to society an acceptance of this concept. In the complex and turbulent society we live in, and the whirlpool of our age of technocracy and our socioeconomic structure, various injuries affecting the mind and body may result. If experience means anything, we must take cognizance of experience when we are told that each year in the United States there occur approximately 100,000 deaths due to violence of one kind or another and an equal or greater number of deaths take place unexpectedly from obscure causes and are, therefore, potential cases of death by violence. Approximately 200,000 unexplained or violent deaths each year are due to accidents, suicides, and homicides. Moritz [2] interprets these reports by insisting that "society depends upon the physician of the country to acquire and interpret the medical evidence needed to separate the violent from the non-violent deaths in this group, to aid in distinguishing between homicide, suicide and misadventure, and to recognize previously unsuspected but potentially preventable hazards to public health. If these and other medicolegal responsibilities of the medical profession are ignored during undergraduate medical education, the young physician is encouraged to believe that such responsibilities are unimportant and he has no obligation to discharge them."

In a discussion on "The Sanctity of Law: A Critique," Professor Cohen [6] says, "If we wish to deal with the economic problem realistically, we must get rid of fixed *a priori* views. These views come down from a relatively stable society. In such a society certain customs become established and hallowed by use and wont. But they are no longer applicable to a heterogeneous and rapidly changing order. We cannot live by established custom when things are changing or when the ideas of justice of one group conflict with the ideas of justice of another group. We need a better technique for finding ways of adjustment."

If we are to give assistance in matters pertaining to public safety and criminal justice, our obligations to our patients and society can only be fulfilled through the medium of education, by teaching legal medicine to our undergraduate students and to physicians at the graduate and postgraduate levels. Society will be the beneficiary, for we will have contributed the tools necessary to aid the law of the land. Justice will have the honest support of physicians and scientists in the active processes of remedying or preventing what would arouse the sense of injustice.

808 S. Wood St. (12).

5. Cahn, E. N.: The Sense of Injustice: An Anthropocentric View of Law, New York, New York University Press, 1949.

6. Cohen, M. R.: Reason and Law: Studies in Juristic Philosophy, Chicago, the Free Press, 1950, p. 139.

EXTRAOLFACTORY COMPONENTS OF FLAVOR

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Originally stimulated by interviewing an anosmic patient who stated she could still perceive flavors, we turned to the literature on the subject of flavor and found that uncertainty continues to exist as to the importance of olfactory and extraolfactory sensations in this regard. Because of the availability of five patients whose olfactory nerves had been surgically proved to be destroyed, either by basofrontal brain tumors or by cranial trauma, the opportunity presented itself for more definitive study.

METHOD

The five patients (one the subject of a published case report [1]) mentioned in the preceding paragraph were studied, together with a group of 10 normal controls. The patients without the sense of smell were of both sexes and of varying ages and occupations and had been anosmic for varying periods. The controls fell into similar categories. Smokers and nonsmokers were present in both groups. One control had complete dentures. All subjects were free of nasopharyngeal and sinus disease. In each instance the sense of taste and the somatic sensibilities of the mouth were intact. All of the controls gave normal olfactory responses as well. The anosmics, of course, could not perceive odors. Because we could not find a test of flavor directly applicable to the situation, we devised our own. The details of this test are reported elsewhere.[2] Briefly, however, it consisted of 31

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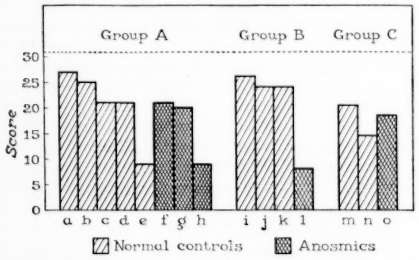
1. Clark, E. C., and Dodge, H. W., Jr.: The Effect of Anosmia on the Appreciation of Flavor: Report of a Case, Neurology **5**: 671-674 (Sept.) 1955.

items. These were vegetables and fruits given to the subjects in different consistencies at room temperature. The test for each subject was similar in detail in every instance and was given in two separate parts on successive days or weeks so as to prevent fatigue. All solid foods were cubed so as to prevent easy identification of the substance by its shape. The subjects were blindfolded during the procedure. Their mouths were rinsed with water, and several minutes were allowed to elapse between the giving of one test food and the next. As each food was given, the subject was requested to identify it. If he could do this he was asked whether he could perceive the flavor.

RESULTS

Normal Controls.—Analysis of the responses to testing of the normal controls revealed considerable variation in the accuracy of their answers. Although women tended to do better than men, experience with cooking was not a prerequisite for superior performance. As might have been expected, these subjects did best when presented with standard dietary items in their common



Comparison of the flavor-test scores of 5 anosmic patients and 10 normal controls. Thirty-one items were used in the test; a perfect score, therefore, would have been 31. Group A includes seven housewives, three of whom were anosmic and four, normal. All had had considerable experience in cooking. The fifth control (column e) was a middle-aged man with no particular culinary experience. Group B includes four young business women who cooked occasionally. One was anosmic, and three were normal. Group C includes three men, aged 20 to 24 years. One was anosmic, and two were normal. None had experience in cooking.

vehicles and in their usual consistency. The one normal control with complete dentures did poorly with the test foods (see figure, column e). Possibly his dentures affected his perception of flavor. Some of the normal controls tended to pay more attention to oral sensations than did others. It must be reiterated that all of these patients were blindfolded and were deprived, therefore, of visual recognition of the food.

Anosmic Patients.—The scores made by anosmic patients also varied considerably. While two of the anosmic housewives (columns f and g) received the highest scores of the group, experience in cooking was not necessarily related to the best performance. As might have been expected, the more expert anosmic women did better than the one young man (column o) who had lost his sense of smell. As with the normal controls, anosmic patients were more accurate when presented with foods commonly eaten in their standard vehicle and in their usual consistency than when foods were in anywise unfamiliar. Of the anosmic patients who could recall having been able to detect odors, one (column h) believed that she had been largely deprived of her ability to discern flavors. Another woman who had lost her sense of smell at the time of operation (column g) stated that she had noticed no difference in the flavor of foods before and after complete destruction of her olfactory nerves. Two other such patients (columns f and o) observed that they had lost their ability to discern a few relatively unimportant flavors along with their loss of the sense of smell. One anosmic bookkeeper (column l) could not recall ever having recognized odors. When questioned she stated that she could perceive flavors well; nevertheless, when tested she did poorly. However, she often mentioned the color and appearance of the food that she thought she had been given in the test, and she seemed to be hampered more by the blindfolding than were some of the other anosmic as well as the normal patients.

Comparison of Normal Controls and Anosmic Patients.—To clarify relative abilities we assembled the normal controls and the anosmic patients in three separate groups, as is shown in the figure. The composition of these groups is given in the accompanying legend. No anosmic patient did as well as the best normal controls in identifying test foods; however, some of the subjects without the sense of smell did as well as some of the normal controls and better than the poorest control (column e). As was expected, some of the anosmic patients did very poorly (columns h and l).

On most occasions, when the test food was correctly identified either by an anosmic or by a normal control, the subject declared that he could perceive the flavor. In a few instances, however, members of both groups identified a food by physical characteristics but stated that they could not perceive the flavor. Conversely, on occasion members of both groups would misidentify some food and state that they could discern the flavor. For example, one normal person identified a pear as a peach and stated that she could perceive the flavor of peach.

COMMENT

Contrary to what might have been expected from a review of the literature,[3] the ability of certain of the totally anosmic patients to perceive flavor was not seriously impaired by their loss of the sense of smell. The fact that these subjects were able to score as well as, or better than, some normal controls in the tests of flavor suggests that olfaction had not been of paramount importance in their ability to discern the flavor of foods prior to their losing the sense of smell. This does not imply, however, that olfaction is always of secondary importance in the perception of flavor. As was demonstrated by the low test scores of the remaining anosmic patients, loss of olfaction (and perhaps of vision) appears to have been of primary importance in their failure to perceive most flavors. In view of this, it seems that flavor must be a composite of many sensations. Consequently, separating flavor into its various components is difficult. In fact, with the data at hand, we can only speculate as to the make-up of this sensory complex.

2. Dodge, H. W., Jr., and Clark, E. C.: A Test for Flavor with Report of a Case of Congenital Anosmia, Proc. Staff Meet. Mayo Clin., to be published.

3. (*a*) Clark, E. C., and Dodge, H. W., Jr.: The Appreciation of Flavors, Postgrad. Med. **17**: 142-144 (Feb.) 1955. (*b*) Crocker, E. C.: Flavor, New York, McGraw-Hill Book Company, Inc., 1945.

The many odors that man can distinguish undoubtedly add materially to the enjoyment of foods. The ability to perceive sweet, salty, sour, and bitter sensations in the mouth is one of the most fundamental building blocks of this sensory composite. The widespread location of the taste buds on the tongue, palate, and nasopharynx gives man a maximal opportunity to sample each morsel of food before swallowing it. However, the act of perceiving flavors is not a simple mental combination of odor and taste. All of the somatic sensations experienced in the mouth, nasopharynx, and adjacent structures are important. For example, the temperature end-organs in the buccal cavity are our main source of information concerning the hotness or coldness of a substance at the time of eating. Most Western peoples are accustomed to a hot cup of coffee, and this coffee at room temperature is less palatable, both because of its temperature and because of its lack of aroma.

Pain is another important oral sensation associated with flavor. It prevents admission of noxious substances to the alimentary tract and, paradoxically, adds to the enjoyment of food; for example, no connoisseur of Mexican food would be entirely satisfied with a "bland" hot tamale. The wetness or dryness of foods can alter the flavor considerably, both from the standpoint of the sensation produced in the mouth and from that of the chemical changes within the food produced by hydration or dehydration. Likewise, chemical changes produced in the food by saliva may play an important part in certain instances.

The end-organs of light touch and deep pressure are utilized by the mouth, alone, together, or in combination with other sensation. Although difficult to analyze, sensibilities that play important parts in the contribution of oral sensations to flavor are vibration and other sensibilities mediated by way of the teeth and bones of the jaws, proprioceptive impulses from the muscles of mastication and expression, two-point discrimination, and stereognosis. Such terms as texture and consistency represent qualities of foods that elicit composites of many of these oral sensations. A food that exemplifies both of these qualities, as pointed out by Crocker,[3b] is taffy. This "chewy" candy is pulled by machines (or by hand) to develop brittleness and fibrous texture, which stimulate more desirable sensations and improve flavor.

One cannot, however, limit flavor to olfaction, taste, and the somesthetic sensations of the oral cavity. Vision, hearing, and the psychological state of the person at the time of eating the food also are important. Vision, for example, plays a prominent part, though one difficult to evaluate, in the perception of flavor. The tests used in this study, on both the anosmic and the control groups, necessarily excluded vision. Hearing enters into the perception of flavor in many ways. Modern advertisers recognize this in their use of such terms as crunchy and crackling, words with strong auditory components. The psychological state of the person at the time of eating may affect his perception of flavor. This psychological component has many facets. Among these, at least in part, are those just mentioned: vision and hearing. Also involved are the memories of previous experiences with the flavor, the interest the person has in food, and the setting in which the food is being eaten.

Thus, extraolfactory sensations often play major roles in the perception of flavor. However, as already has been mentioned, this does not necessarily imply that olfaction is not, at times, of primary importance in this regard. Rather, it suggests that olfaction may be one of the basic elements used in the final cerebral synthesis of flavor and that individuals may vary in their dependence on one sensation (smell, temperature, and taste for sweet, salt, or sour flavors, and so on) or another, in accordance with the sensory patterns learned previously.

One might well apply Mackay's simile [4] of the piano keyboard to these basic head sensations. Each normal individual has the full sensory keyboard at his disposal during maturation. As each person develops his sensory patterns, he may learn to use one or another, or a combination, of the various head sensations as the fundamental tone and to employ the remaining sensory modalities as the harmonics of the sensory chord. Should the fundamental tone be lacking and only the harmonics remain, the chord may become a meaningless grouping of tones and the perception of flavor may be lost. Thus the olfactory and extraolfactory sensations appear to play roles of varying importance in the discernment of flavor. One or the other is the fundamental tone, and the remaining sensations serve secondarily as the harmonics. In addition, the possibility that some undiscovered receptive mechanism in the mouth and nasopharynx may enter into the perception of flavor cannot be excluded.

This concept that flavor is a synthesis of many different sensations, in which olfaction plays a role of varying importance, raises certain semantic questions. As the word "flavor," thought to be derived from the old French term *flaur, fleiur,* meaning smell, is defined in the Oxford Dictionary as "the element in the taste of a substance which depends on the co-operation of the sense of smell," this term no longer seems adequate. The less commonly used word "savor," derived from the old French *savur, savour,* meaning "taste," seems more appropriate, and we suggest its use in this sense.

SUMMARY

When proved anosmic and normal control patients were studied to determine their ability to perceive flavors, it was found, contrary to popular belief, that several of the anosmic subjects were able to discern flavor. As olfaction was excluded in these cases, it is apparent that the extraolfactory components must at times play the major roles in identification of the flavor of substances. These extraolfactory components are the somatic sensations experienced in the mouth, nasopharynx, and adjacent structures, as well as vision, hearing, memory, and the psychological state at the moment of eating. Speculation is warranted on the mechanism of the interplay between the olfactory and extraolfactory sensations in the final sensory synthesis of flavor and on the possibility that some undiscovered receptive mechanism in the mouth and nasopharynx may enter into perception of flavor. Finally, it is felt that the word "savor" is much less attended by the connotation "smell" than is the word "flavor," and would seem to be a more appropriate term in this regard.

4. Mackay, R. P.: Toward a Neurology of Behavior, Presidential Address. Tr. Am. Neurol A. **79**: 1-8, 1954.

INTRA-ARTICULAR AND PARAVERTEBRAL INJECTION OF CORTISONE IN OSTEOARTHRITIS OF SPINE

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Osteoarthritis of the spine is a common ailment. While the disease is of metabolic origin, certain occupations predispose to its development. For clarity, osteoarthritis is best described in three divisions, that is, as it affects the (1) cervical vertebrae, (2) thoracic vertebrae, and (3) the lumbar vertebrae and sacroiliac and lumbosacral joints. More than one of these locations is likely to be involved.

Osteoarthritis of the cervical vertebrae is prevalent among individuals whose occupations necessitate that the head be held in one position for long periods. The telephone operator, the traffic officer, and the physician or attorney who reads a great deal are probable subjects. Early in the disease there may be only a cracking sensation in the neck. Pain may not occur at this stage, but, when it does, it is referred to the side of the neck and radiates to the shoulder and frequently down the arm. It varies in intensity from a dull ache to a lancinating pain. Sometimes pain occurs bilaterally.

The radiographic examination shows normal curvature, but exostoses are present. The lateral view readily demonstrates that they extend into the soft tissues anteriorly from the bodies of the vertebrae at the junction of the cartilage of the intervertebral disk. The anteroposterior view shows spurring in the intra-articular facets. These findings, however, are not a criterion of the actual pathological process involved, because a large area of inflammation must be present for some time before the reaction to it can result in formation of new bone.

Osteoarthritis of the thoracic vertebrae is prone to occur among individuals who pursue laborious occupations. The housewife who raises a large family and whose duties necessitate the scrubbing of floors, the weekly washing of clothes, and numerous menial household chores; the stevedore; the grocery clerk who lifts heavy loads; and the obese individual present this picture. It is a disease of the middle-aged and elderly. The usual complaint is of pain over the precordium or in the upper or middle back. Deep breathing, coughing, sneezing, bending, or exercising will precipitate pain. Tenderness over the spine is apparent upon thumping above the involved areas. This is the time-honored intercostal neuralgia. Osteoarthritis of the thoracic vertebrae is readily recognized upon radiographic examination.

The pathological changes are usually confined to the intervertebral disk and the bodies of the vertebrae. Because of continued stress at the anterior, anterolateral, and lateral margins of the cartilage and bone, a low-grade inflammation commences. As the cartilage is avascular and bone is well supplied with blood, the metabolic process results in a paucity of cartilagenous cells and an osseous outgrowth (lipping). Usually spicules of bone form on the proximal and distal margins of the bodies of the vertebrae. Eventually the spicules meet, and because of contiguity ankylosis results. Here, too, it must be borne in mind that, while radiographic examination may reveal extensive osteoarthritis, a larger area than that exposed must have been involved for the extensive inflammation reaction to have occurred. The low-grade inflammatory also affects soft tissues, so that intercostal nerves are involved in the process as well as cartilage and bone.

Osteoarthritis of the lumbar spine, lumbosacral joint, and sacroiliac joints is the most common type. Except for the knee joints, osteoarthritis most frequently involves the lower spine. Excessive weight, faulty posture, and undue effort all affect these joints. Pathologically the process resembles that of osteoarthritis in other sections of the spine.

TREATMENT

Because of the severe pain associated with osteoarthritis of the spine and because there is so little in the therapeutic armamentarium for the relief of this condition, we undertook to study its treatment with intra-articular and paravertebral injections of cortisone. Our results have led to the suggestion of a method for obtaining symptomatic relief that can supplement older proved methods of treatment. There is no intent to detract from the time-honored means for the relief of stress and strain in osteoarthritis of the spine.

Both cortisone and hydrocortisone have been injected intra-articularly in rheumatoid arthritis and osteoarthritis.[1] While not uniformly effective, cortisone has in general produced the same effects as hydrocortisone but to a lesser degree and for a shorter length of time. In rheumatoid arthritis, there has been diminution in inflammation, pain, swelling, and stiffness, and diminution or disappearance of effusion. A decrease in the total white blood cell count in the joint fluid and improvement in the quality of mucin and in viscosity of synovial fluid have occurred as well as a reduction in the intra-articular temperature. Improvement in the range of motion in patients with osteoarthritis has been reported.[1e]

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Cortisone was furnished as Cortogen acetate injection for this study by Dr. George Babcock, Clinical Research Division, Schering Corporation, Bloomfield, N. J.

1. (*a*) Duff, I. F.; Robinson, W. D., and Smith, E. M.: Evidence of Direct Action of Adrenocortical Steroids on Connective Tissue: The Effects of Systemic Administration of ACTH and Cortisone, and of Intra-Articular Cortisone and Compound F on the Joint Fluid in Rheumatoid Arthritis, J. Lab. & Clin. Med. **38**: 805, 1951. (*b*) Hollander, J. L.; Brown, E. M., Jr.; Jessar, R. A., and Brown, C. Y.: Hydrocortisone and Cortisone Injected into Arthritic Joints: Comparative Effects of and Use of Hydrocortisone as a Local Antiarthritic Agent, J. A. M. A. **147**: 1629 (Dec. 22) 1951. (*c*) Bilka, P. J.: Intra-Articular Use of Hydrocortisone in Rheumatic Diseases, Minnesota Med. **35**: 938, 1952. (*d*) Ziff, M.; Scull, E., and Bunim, J. J.: Effects of Intra-Articular Cortisone and Hydrocortisone in Rheumatoid Arthritis, Fed. Proc. **11**: 405, 1952. (*e*) Kersley, G. D.: Intra-Articular Use of Steroids in Arthritis, read before the 8th International Congress of Rheumatic Diseases, Geneva, Switzerland, August, 1953.

In rheumatoid arthritis, the injection of hydrocortisone has resulted in marked prompt local alleviation of symptoms and signs: decreased joint swelling and pain, improved motion, and reduced joint temperature.[2] It has produced prompt and better-sustained decrease in cell count of synovial fluid and a greater and more sustained increase in viscosity as compared with cortisone. In osteoarthritis,[3] the injection of hydrocortisone into the affected joints has promptly relieved signs and symptoms. Greater relief has been obtained and for longer periods than in rheumatoid arthritis. The beneficial effects seem to indicate that hydrocortisone has anti-inflammatory as well as antirheumatic action. Relief has lasted from a few days to several weeks. Successive injections have been as effective as the first.

Many joints have been injected with cortisone or hydrocortisone, primarily the knee, the hip, the elbow, the wrist, and the ankle. Since there has been a warning against intervertebral injection, few reports on intra-articular injection in the spine have appeared, but the procedure has been accomplished successfully.[4] The procedure we have developed in extending our experience [4a] on injection into and around the spine varies with the section of the spinal column under treatment. Thus a paravertebral injection is made around the cervical vertebrae while an intra-articular injection is made in the sacroiliac joints.

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PARAVERTEBRAL INJECTION OF CERVICAL VERTEBRAE

Paravertebral injection of cervical vertebrae is relatively simple. First, consideration must be given to the sensory distribution from the cervical and the brachial plexus. When occipital headache due to cervical arthritis is present, involvement of one or more of the three

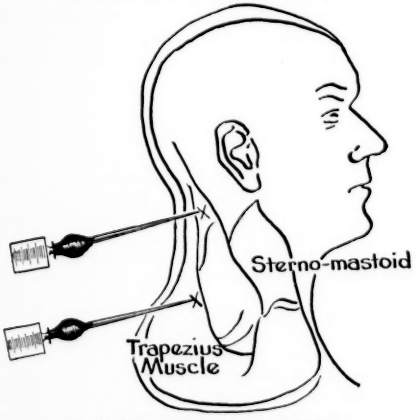

Fig. 1.—External site of paravertebral injection.

upper cervical vertebrae is likely. If pain radiates from the neck to the shoulder or down one or both arms, then the brachial plexus is concerned and cervical vertebrae below the third will be involved. The usual site lies between the fourth and the sixth cervical vertebrae.

The technique of paravertebral injection is as follows. The skin is sterilized in the usual manner. If desired, 1% procaine hydrochloride may be used for local anesthesia, but we prefer to inject cortisone or hydrocortisone without the aid of a local anesthetic in order to avoid confusion in the interpretation of results. Irritation to either drug is sometimes encountered. To insure against

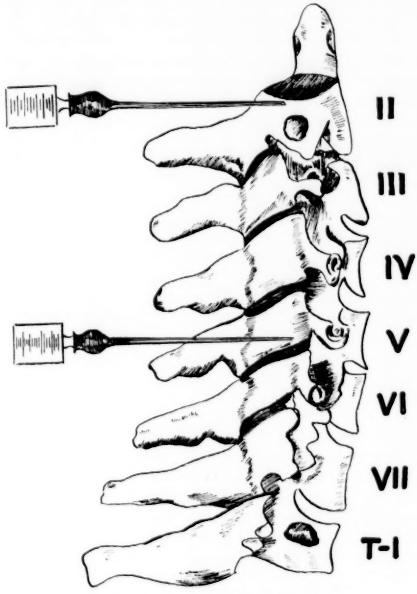

Fig. 2.—Internal site of paravertebral injection.

this, an equal volume of 1% procaine hydrochloride may be injected simultaneously in the same syringe. One cubic centimeter (25 mg.) of cortisone or hydrocortisone in aqueous suspension is drawn into a syringe fitted with a long, 21-gauge needle. The needle is inserted laterally at the level of the involved area. It is then advanced medially and anteriorly at a 45 degree angle until the transverse process is encountered (fig. 1 and 2)

2. (*a*) Boland, E. W.: Rheumatoid Arthritis: Experiences with Hydrocortisone (Free Alcohol) and Hydrocortisone Acetate, California Med. **77**: 1, 1952. (*b*) Young, H. H.; Ward, L. E., and Henderson, E. D.: The Use of Hydrocortisone Acetate (Compound F Acetate) in the Treatment of Some Common Orthopaedic Conditions, J. Bone & Joint Surg. **36-A**: 602, 1954. (*c*) Berry, W. C., and Benson, J. F.: Hydrocortisone in Rheumatoid Arthritis, U. S. Armed Forces M. J. **4**: 99, 1953. (*d*) Brown, E. M., Jr.; Frain, J. B.; Udell, L., and Hollander, J. L.: Locally Administered Hydrocortisone in the Rheumatic Diseases: A Summary of Its Use in 547 Patients, Am. J. Med. **15**: 656, 1953. (*e*) Hollander, J. L.: Intra-Articular Hydrocortisone in the Treatment of Arthritis, Ann. Int. Med. **39**: 735, 1953. (*f*) Ramsey, R. H., and Key, J. A.: Use of Hydrocortisone (Compound F) by Local Injection in Arthritis and Allied Conditions, Missouri Med. **50**: 604, 1953. (*g*) Bornstein, J., and others: Intraarticular Hydrocortisone Acetate in Rheumatic Disorders, Geriatrics **9**: 205, 1954.

3. (*a*) Breck, C. A., and Breck, R. W.: The Intra-Articular Use of Hydrocortisone, Meriden Hosp. Bull. **6**: 39, 1952. (*b*) Ensign, D. C., and Sigler, J. W.: Intra-Articular Hydrocortisone in Treatment of Arthritis, J. Michigan M. Soc. **51**: 1189, 1952. (*c*) Weiss, T. E.; Duncan, T., and de la Cruz, B.: The Local Injection of Hydrocortisone in the Treatment of the Painful Joint, J. M. A. Georgia **43**: 629, 1954. Footnote 2*b*, *d*, *e*, *f*, and *g*.

4. (*a*) Cohen, A.; Rose, I., and Seven, M. J.: Intra-Articular Injection of Cortisone in the Treatment of Rheumatoid and Hypertrophic Arthritis, New England J. Med. **250**: 507, 1954. (*b*) Footnote 3*a*.

and then directed toward the midline. When resistance is again encountered, the cortisone or hydrocortisone suspension is infiltrated into the area. If blood is drawn into the syringe before the injection is completed, the needle should be withdrawn and the process repeated in order to avoid the injection of cortisone into a blood vessel. This is considered a paravertebral injection. True intra-articular injection cannot be accomplished because of the nature of the spinal articulations. A similar but more posterior approach may be used in the injection of thoracic and lumbar vertebrae. We have had little success in injecting the lumbosacral joints.

INTRA-ARTICULAR INJECTION OF SACROILIAC JOINTS

Injection of the sacroiliac joints is not a difficult procedure. A long, 21-gauge needle is inserted directly into the upper area of the joint and 12.5 mg. of cortisone or hydrocortisone in aqueous suspension injected. The needle is then withdrawn from the joint, but not from the subcutaneous tissue, and another 12.5 mg. of cortisone or hydrocortisone injected into the lower end of the joint.

INVESTIGATION

Forty-five patients with osteoarthritis were treated by injection of cortisone or hydrocortisone into or around joints in the spine. The disease affected several sections of the spine, as follows: cervical vertebrae 26 patients, right or left sacroiliac joint 13 patients, right and left sacroiliac joint one patient, thoracic vertebrae 2 patients, lumbar vertebrae 2 patients, and thoracic and lumbar vertebrae one patient. Thus osteoarthritis in 46 locations was treated. The sex distribution among the 45 patients was approximately equal in the groups with each kind of involvement, except that the 3 patients with osteoarthritis of the lumbar spine were women.

Cortisone was injected in 37 instances and hydrocortisone in 9. The portion of the spine affected and the numbers of patients with each type of involvement treated with these substances is shown in the table. The interval between injections of cortisone or hydrocortisone usually was one or two weeks. It was one month in three patients with osteoarthritis of the sacroiliac joint. One patient with similar involvement received only one injection of cortisone and another patient injections of hydrocortisone for only two days. In general, if no benefit occurred after four injections, there was little likelihood of benefit from further injections. When patients improved with treatment, the response was subjective and consisted of varying degrees of relief of pain. The patients' responses were graded as: grade 3, marked relief; grade 2, moderate relief; and grade 1, slight relief. Paravertebral injections as described above were given in each patient with osteoarthritis of the cervical vertebrae. Twenty-two patients in this group received cortisone, and 4 received hydrocortisone. Among the cortisone-treated patients the disease had been present for two to six weeks in 6 patients, for three months to one year in 12, and for three to five years in 4 patients. It had been present between three weeks and three months in three patients treated with hydrocortisone and for one and a half years in the fourth patient in this group. Twelve patients received 2 to 5 injections of cortisone, 8 patients received between 8 and 14 injections, and one patient received 17 and another 21 injections. Hydrocortisone was injected three or four times in the four patients receiving it.

Eighteen, or four-fifths, of the patients treated with cortisone were benefited. Six patients each noted marked, moderate, or slight relief of pain. Four failed to improve. The duration of the disease had little effect on the predictability of the response. Pain disappeared from two of the four patients receiving hydrocortisone, was relieved to a moderate degree in one, and was slightly relieved in another. The groups of patients showing some response are small, but the effect of hydrocortisone did not appear to be superior to that with cortisone.

The pain in the sacroiliac joint of seven patients disappeared during treatment by intra-articular injection of cortisone and was partially relieved in four more. The condition grew worse in one patient who had had osteo-

Response to Intra-Articular Injection of Cortisone or Hydrocortisone

Joint Affected	No. of Patients M	No. of Patients F	Duration of Disease	Interval Between Injections	Total No. of Injections	Result: Improved* Grade 1	Improved* Grade 2	Improved* Grade 3	Not Improved	Worse
Cervical vertebrae										
Cortisone	13	9	2 to 6 wk.—6 3 mo. to 1 yr.—12 3 to 5 yr.—4	1 to 2 wk.	2 to 5—12 8 to 14—8 17 to 21—2	6	6	6	4	..
Hydrocortisone	1	3	3 wk. to 3 mo.—3 1½ yr.—1	1 to 2 wk.	3 to 4	1	1	2	..	..
Sacroiliac†										
Cortisone	5	7	2 to 5 wk.—3 3 to 6 mo.—2 1½ to 5 yr.—4 6 to 15 yr.—3	1 to 2 wk.—8 1 mo.—3 1 injection—1	1 to 3—6 7 to 9—2 12 to 17—4	1	3	7	..	1
Hydrocortisone	1	1	3 days—1 4 yr.—1	Daily—1 1 wk.—1	2	..	..	1	1	..
Thoracic vertebrae										
Cortisone	1	..	3 yr.	1 wk.	14	..	1	..	..	..
Hydrocortisone	..	2	4 yr.—1 15 yr.—1	1 wk.	18-1 23-1	2	..	..	..	..
Lumbar vertebrae										
Cortisone	..	2	6 mo.—1 1½ yr.—1	1-2 wk.	11-1 12-1	1	1	..	..	..
Hydrocortisone	..	1	15 yr.	1 wk.	23	1	..	..	..	..
Summary										
Cortisone	19	18	.....	.....	.....	8	11	13	4	1
Hydrocortisone	2	7	.....	.....	.....	4	1	3	1	..
Totals	21	25	.....	.....	.....	12	12	16	5	1

* Grade 1 = slight relief; grade 2 = moderate relief; and grade 3 = marked relief.
† One patient had osteoarthritis of both sacroiliac joints.

arthritis of the sacroiliac joint for "many years." The disease in about half of this group of 12 patients had existed from two weeks to six months and from 1.5 to 15 years in the remainder of patients. Pain of three days' duration in the sacroiliac joint of one patient disappeared when hydrocortisone was injected on two successive days. The disease had been present for four years in the second patient so treated. Two injections of hydrocortisone were given at a one-week interval with no improvement becoming apparent.

With paravertebral injection but a slightly more posterior approach, thoracic vertebrae were injected in three patients, with cortisone in one patient and hydrocortisone in two. Moderate pain relief occurred in the cortisone-treated patient after 14 weekly injections. The disease had existed for 4 and 15 years, respectively, in the other two patients. Although 18 to 23 weekly injections of hydrocortisone were given, pain was only slightly relieved.

Osteoarthritis of the lumbar vertebrae also was only slightly or moderately improved by cortisone in two patients and by hydrocortisone in one long-standing case. Eleven and 12 injections of cortisone, respectively, were given at intervals of one or two weeks. Twenty-three injections of hydrocortisone only slightly relieved the pain around the lumbar vertebrae in the patient who also had the same number of injections around the thoracic vertebrae.

In the original report, injection of cortisone into or around the spine was given in 16 patients with osteoarthritis. Two patients with osteoarthritis of the sacroiliac joint and one with osteoarthritis of the lumbosacral joint improved. Six of seven patients with cervical vertebral disease and five of six with osteoarthritis of lumbar vertebrae improved.

Considering together all of the 62 patients in the two series with osteoarthritis of the spine receiving cortisone or hydrocortisone, 42 (67.7%) were markedly or moderately improved, 12 (19.4%) slightly benefited, 7 (11.3%) unchanged, and one (1.6%) became worse during intra-articular or paravertebral injection. The number of patients receiving hydrocortisone is too small for statistical comparison, but in general the effect with this substance was not superior to that with cortisone.

SUMMARY

Cortisone acetate or hydrocortisone acetate was injected paravertebrally around cervical, thoracic, and lumbar vertebrae and intra-articularly into the sacroiliac joints of 46 patients with osteoarthritis affecting one of these portions of the spine. The disease was of long standing in some of the patients in each group. Injections varied in number from 1 to 23 and were usually given at intervals of one to two weeks. Thirty-seven patients received cortisone acetate and nine hydrocortisone acetate. Subjective improvement consisting of relief of pain occurred in 40 patients. This was marked in 16, moderate in 12, and slight in 12. Five patients showed no change, and one grew worse during treatment. The effect of hydrocortisone did not appear to be superior to that of cortisone. If no benefit was apparent after four injections, it did not usually occur with further injections.

ADDENDUM

Subsequent to the submission of this report, we have studied prednisolone (Meticortelone) acetate injections of 25 mg. per cubic centimeter utilized as above. There were six patients with cervical osteoarthritis and four with dorsal osteoarthritis. The number of injections were cervical 48 and dorsal 22, with no untoward reactions. Intervals of injections were as above. Percentage of results were the same.

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DETERMINATION OF ARTERIAL BLOOD PRESSURE IN THE LOWER EXTREMITY

USE OF AN EIGHTEEN CENTIMETER SPHYGMOMANOMETER THIGH CUFF

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and
Col. Thomas W. Mattingly, (MC), U. S. Army

Determination of the arterial blood pressure in the lower extremity is an important part of the physical examination. This simple procedure is of particular value in the diagnosis of various conditions in which there is a significant disparity between the pressure in the arterial system of upper and lower extremities. Such conditions include (*a*) congenital coarctation of the aorta, (*b*) acquired occlusive diseases of the aorta and large arteries of the lower extremities, (*c*) extrinsic compression of the aorta, and (*d*) aortic aneurysms.

The presence of palpable pulses in the peripheral arteries of the lower extremity does not necessarily exclude the above conditions. Even an experienced clinician cannot detect minor but often significant differences in the volume of the pulses in the two extremities. Palpation of the pulses in the peripheral arteries of the lower extremities in individuals suspected of having coarctation of the aorta is an unreliable screening procedure to eliminate the existence of this lesion.[1] Accurate and prompt diagnosis of the above conditions is important, as the majority of them can be corrected by surgery or improved by appropriate medical management. On the

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The opinions and recommendations as given in this publication are those of the authors and do not necessarily reflect those of the Medical Service, Department of the Army.

Lieut. Col. Herschel E. Griffin, M. C., and Corp. Irwin Kluger, Army Medical Service Graduate School, Walter Reed Army Medical Center, Washington, D. C., made the statistical analysis of these data.

1. Dacquisto, M. P., and Mattingly, T. W.: To be published.

other hand, the determination of the arterial blood pressure in the lower extremity is not of particular diagnostic value in a variety of other vascular and nonvascular conditions.[2]

The technical difficulties involved in applying the standard 12 cm. cuff to the adult thigh caused our attention to be directed to the use of a nonstandard cuff, 18 cm. in width, especially designed to fit the adult thigh. This cuff is of a tubular design, made of heavy cloth, has easily adjustable hook straps, and remains in place during inflation. In using this cuff the values obtained differed markedly from the accepted normal for the lower extremities. Several studies have been made with use of sphygmomanometers with cuffs 12 cm. and 15.5 cm. in width, as well as direct intra-arterial measurements. Our studies are in agreement with the accepted normal blood pressure values in the upper and lower extremities when the standard 12 cm. sphygmomanometer cuff is used. They also indicate factors that modify the normal readings. The weight of the patient and the circumference of the extremity are factors that cause diversity in the normal.[3] Some observers believe the circumference to be directly related to the body weight, and the weight may therefore be the most important factor.[4] It has previously been shown that cuff size will vary readings in the same individual.[5] The influence of such factors as exercise, posture, venous congestion, and emotional lability are well recognized [6] and are not pertinent to this presentation.

It is recognized that blood pressure as measured by the sphygmomanometer is not exact. Comparison with direct intra-arterial measurements show the brachial artery systolic pressure to be 3 to 4 mm. Hg too low and the brachial diastolic pressure to be 8 mm. Hg too high.[7] Van Bergen and others [8] have shown, more recently, that the indirect readings tend to fall increasingly below the direct measurements as the blood pressure rises.

Prior to 1924 there was thought to be no difference in the arterial blood pressure in the upper and lower extremities of normal persons. In that year Bazett [9] demonstrated, in dogs, a higher systolic pressure in the femoral than in the brachial artery. The following year Burdick,[10] using photomanometric devices, recorded pressures simultaneously in the brachial and femoral arteries in human beings. He found, in normal human beings, the femoral arterial blood pressure consistently higher than the brachial arterial blood pressure. These observations have been confirmed by subsequent investigators.[11] The average values found by these workers, using a 12 cm. cuff, in the upper extremity were between 115 to 118 mm. Hg systolic and 70 to 77 mm. Hg diastolic. Using the same cuff in the lower extremity values of 150 to 154 mm. Hg systolic and 91 to 104 mm. Hg diastolic were obtained. Kotte and others [5] confirmed these findings in the upper and lower extremity using a 12 cm. cuff, but using a 15.5 cm. cuff in the lower extremity they found an average reading of 133 mm. Hg systolic and 85 mm. Hg diastolic. Intra-arterial femoral blood pressure determinations done on the same subjects revealed a systolic pressure of 126 mm. Hg and a diastolic pressure of 63 mm. Hg, indicating that the wider cuff was more accurate in determining the true systolic blood pressure in the lower extremity. These investigations were made with the patients in either the supine or prone position and do not reflect the effects of gravity.

Not having an established normal value for the 18 cm. cuff for blood pressure determination in the lower extremity, we undertook a study to determine such values and to find if the relationship of the values for the upper and lower extremities is statistically significant.

METHOD

One hundred adult males who did not have demonstrable cardiovascular disease were selected for study. All pressure determinations were made and recorded by us. Blood pressure determinations were made in both upper extremities and the right lower extremity with the standard 12 cm. cuff and in the right lower extremity with the specially constructed 18 cm. cuff. These determinations were made with the subjects under near basal conditions, supine for readings in the upper extremity and prone for readings in the lower extremity. The systolic end-point was interpreted as being the onset of the vascular sound and the diastolic end-point as being the cessation of sound. This was done in accordance with the recommendations of the American Heart Association.[12] Additional data accumulated consisted of height, weight, and the circumference of the thigh taken at a point 20 cm. above the upper margin of the patella. The age of the patients was not considered significant, since all persons examined were between 18 and 30 years of age. The blood pressure determinations are tabulated in table 1. There was no significant difference in the readings obtained in the right and left upper extremity, and only the values obtained in right arm are given.

The data presented in table 1 were subjected to statistical analysis. As shown in table 2, there is a significant difference between the systolic and the diastolic readings in the lower extremity with use of the cuffs of different width. The 18 cm. cuff shows a significantly lower systolic and diastolic blood pressure reading than the 12 cm.

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11. Footnotes 2, 3, and 6.

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cuff ($p<0.001$). The average pulse pressure in the lower extremities obtained with the 12 cm. cuff was 63.21 mm. Hg. and that obtained with the 18 cm. cuff was 54.14 mm. Hg. For the 100 adult males examined the pulse pressure was significantly greater in the 12 cm. cuff determinations.

As demonstrated by the figure, there is a relationship wherein a systolic blood pressure obtained with an 18 cm. thigh cuff could predict a systolic reading that might be

TABLE 1.—*Tabulation of Blood Pressure Determinations in Upper and Lower Extremities in 100 Adult Males, Showing Distribution of Values*

Blood Pressure Ranges, Mm. Hg	Right Arm, 12 Cm. Cuff		Thigh, 12 Cm. Cuff		Thigh, 18 Cm. Cuff	
	Systolic	Diastolic	Systolic	Diastolic	Systolic	Diastolic
211-220	..	..	..	..	..	..
201-210	..	..	1	..	..	..
191-200	..	..	2	..	..	..
181-190	..	..	4	..	..	..
171-180	..	..	12	..	1	..
161-170	..	..	14	..	2	..
151-160	3	..	26	..	3	..
141-150	4	..	23	..	17	..
131-140	18	..	11	..	33	..
121-130	30	..	6	..	28	..
111-120	26	..	1	4	12	..
101-110	19	..	..	12	4	1
91-100	..	1	..	34	..	9
81- 90	..	17	..	40	..	29
71- 80	..	42	..	6	..	47
61- 70	..	29	..	4	..	12
51- 60	..	11	..	..	..	2
41- 50	..	..	..	..	..	..
Total	100	100	100	100	100	100

obtained with a 12 cm. thigh cuff. The best fitting regression line is obtained by the least squares method and is: $y = x + 23.6$, where x is the systolic reading with the 18 cm. cuff and y is the systolic reading with the 12 cm. cuff. The data were subjected to the analysis of variance in order to see how well they fitted the curve. Table 3 summarizes the analysis of variance.[13] The F ratio clearly indicated that the chances are less than one in a thousand of obtaining an F value of this magnitude if there is no linear relationship between x and y. It should be expected that this relationship would be present, inasmuch as the same values were measured in each instance.[13] This relationship is real but not precise, i. e., a reading with use of one of the cuffs is not readily translatable into an expected reading with use of the other cuff.

TABLE 2.—*Summary of Blood Pressures, Upper and Lower Extremities, in 100 Adult Male Subjects*

Size of Cuff	Blood Pressure	Mean Blood Pressure	Standard Error of Mean
12 cm. (arm)	Systolic	124.20	1.25
	Diastolic	74.25	0.87
12 cm. (thigh)	Systolic	157.36	1.80
	Diastolic	94.15	1.10
18 cm. (thigh)	Systolic	134.43	1.43
	Diastolic	80.29	0.95

There was no statistical relationship apparent between the thigh size and the blood pressure obtained with the 18 cm. cuff, nor was there a significant relationship between the diastolic readings, as obtained with the different cuffs, in the lower extremity.

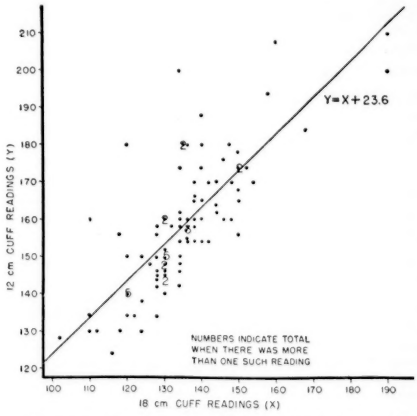
In all instances, in this small group of normal patients, the systolic blood pressure in the thigh, as determined with either the 12 or 18 cm. cuff, was found to be higher than the blood pressure in the arm, as determined with the 12 cm. cuff. As shown in table 1, the pressure in the thigh as determined with the 18 cm. cuff more closely approximates the arm pressure as determined with the standard 12 cm. cuff. It is our opinion that a systolic pressure in the thigh lower than the systolic pressure in the arm, with use of either the 12 cm. or 18 cm. cuff, is indicative of organic disease and makes further diagnostic study mandatory.

TABLE 3.—*Analysis of Variance to Test for Linearity Between Systolic Readings* *

Source of Variance	Degrees of Freedom	Sum of Squares	Mean Sum of Squares	F †
Regression	1	18,769.51	18,769.51	137.7
Deviations from regression	98	13,319.53	135.91	.....
Total	99	32,089.04		

* As obtained with the 12 cm. and 18 cm. sphygmomanometer cuffs (thigh).

† Ratio of the larger mean variance between samples to the smaller mean variance within samples.



Systolic blood pressure of 100 adult males obtained with 12 and 18 cm. cuffs (thigh).

SUMMARY AND CONCLUSIONS

A study was made of the arterial blood pressure values obtained in the thigh with a nonstandard 18 cm. sphygmomanometer cuff. It is apparent that there is a significant difference in pressures so obtained when compared to the pressures obtained with the standard 12 cm. arm cuff, the difference being especially significant in the level of the systolic pressure. It is important that the examining physician recognize this difference, and when different-sized cuffs are used they should be so defined in order that values may be properly interpreted and evaluated.

13. Snedecor, G. W.: Statistical Methods Applied to Experiments in Agriculture and Biology, ed. 4, Ames, Iowa, Iowa State College Press, 1946, pp. 61, 127.

The values obtained with the 18 cm. cuff more closely approximate the intra-arterial reading in the femoral artery than do the values obtained from the use of the 12 cm. or 15.5 cm. cuff in the normal adult patient. This and the ease of application makes the larger cuff a more desirable diagnostic tool. It is recommended that the committee on standardization of blood pressure of the American Heart Association give consideration to a standard for procedure and normal values for the arterial blood pressure in the lower extremity.

CLINICAL NOTES

SUBACUTE BACTERIAL ENDOCARDITIS TREATED BY INTRAVENOUSLY GIVEN ERYTHROMYCIN

REPORT OF A CASE

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Joanne Lloyd-Jones, M.D.
and
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The present communication reports the apparent cure with intravenously given erythromycin of an antibiotic-resistant, nonhemolytic, streptococcic, bacterial endocarditis.

A 38-year-old woman was referred to our hospital on Jan. 18, 1954, with the diagnosis of an antibiotic-resistant "staphylococcic" endocarditis. The patient reported that she was a "blue baby" at birth and that she had always had a soft asymptomatic heart murmur. On Sept. 15, 1953, the patient underwent an uncomplicated dilation and curettage for menometrorrhagia of two months' duration. Because of the history of possible congenital heart disease, she was given prophylactic doses of penicillin, 1,000,000 units a day, for the six days of her hospitalization. On Oct. 15, the patient was readmitted to the same hospital with pain in her legs and a fever spiking to 104 F (40 C). A tentative diagnosis of pelvic thrombophlebitis was entertained, but pelvic examination was negative and positive blood cultures soon established the diagnosis of subacute bacterial endocarditis. The organism isolated was reported to be nonhemolytic "Staphylococcus," sensitive to chloramphenicol, bacitracin, and erythromycin but resistant to penicillin, dihydrostreptomycin, chlortetracycline, oxytetracycline, and polymixin. In the ensuing two and one-half months she was given therapeutic courses of chloramphenicol, bacitracin, sulfisoxazole (Gantrisin), and erythromycin. Chloramphenicol was given alone in amounts ranging from 250 to 500 mg. every six hours for a three week period and later in combination with the other two drugs. Bacitracin and erythromycin were given both orally and parenterally. Erythromycin was also given intravenously for a three week period, 1 gm. twice daily. During this time the blood cultures remained positive and the patient's temperature ranged from 100 to 101 F (37.7 to 38.3 C). In addition, her apical systolic murmur increased in intensity, and she experienced three episodes of pulmonary edema, for which she was digitalized. On Jan. 18, 1954, she was transferred to our hospital for further treatment.

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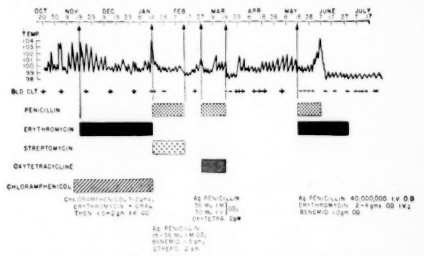
The erythromycin glucoheptonate used in this case was supplied as Ilotycin by Eli Lilly Co., Indianapolis.

Physical Examination.—On physical examination temperature was 100 F; pulse 100, regular; respirations 18; and blood pressure 105/60 mm. Hg. There were subsiding Osler's nodes and marked clubbing of the fingers but no icterus or petechiae. The heart was slightly enlarged to percussion, with the pulmonic second sound much accentuated, and there was a harsh precordial systolic murmur, loudest in the third intercostal space to the left of the sternum and transmitted to the left posterior part of the thorax. There was no evidence of heart failure, and the spleen was not palpable.

Laboratory Data.—The hemoglobin level was 13 gm. per 100 cc. and the leukocyte count 9,000 per cubic millimeter, with marked shift to the left. The urine was negative except for 3+ proteinuria, clearing rapidly after admission. Erythrocyte sedimentation rate was 48 mm. in one hour (Westergren), blood urea nitrogen 9 mg. per 100 cc., thymol turbidity 3+, and protein partition albumin 4.6 and globulin 3.3 gm. per 100 cc. The electrocardiogram was normal. A 2 m. chest film revealed clear lungs and a slightly enlarged heart, with accentuation of the outflow tract of the right ventricle on cardiac fluoroscopy. Cardiac catheterization ruled out patent ductus arteriosus but did not enable us to distinguish between rheumatic valvular disease and a ventricular septal defect. Blood cultures in our laboratory revealed the organism actually to be a nonhemolytic Streptococcus relatively insensitive to penicillin and streptomycin and sensitive to oxytetracycline and erythromycin.



Course of patient with subacute bacterial endocarditis.

Course.—Initial treatment was with aqueous penicillin, 3 million units every four hours intramuscularly; streptomycin, 0.5 gm. every six hours intramuscularly; and probenecid (Benemid), 0.5 gm. every eight hours orally (see figure). During this regimen blood levels of penicillin were 25 units per cubic centimeter two hours after and 12 units per cubic centimeter four hours after an injection of the antibiotic. In vitro sensitivity studies revealed that the organism was inhibited by 10 units per cubic centimeter of penicillin alone, 40 mcg. per cubic centimeter of streptomycin alone, or by a combination of 1 unit per cubic centimeter of penicillin and 5 mcg. per cubic centimeter of streptomycin. Because of this apparent resistance to penicillin, the dosage of that drug was doubled 10 days after therapy was begun and the course continued for another 15 days, with penicillin levels of 25 units per cubic centimeter four hours after the injection. During this 25 day period blood cultures were sterile and the patient afebrile, but 7 days after cessation of therapy blood cultures were once again positive. Now the organism was found to be inhibited in vitro by 20 units per cubic centimeter of penicillin alone, not inhibited by 100 mcg. per cubic centimeter of streptomycin alone, but inhibited by a combination of 4 units per cubic centimeter of penicillin in combination with 2 mcg. per cubic centimeter of oxytetracycline.

On Feb. 28, 1954, another course of antibiotic therapy was begun, with penicillin, 6 million units every four hours intramuscularly and 10 million units every eight hours intravenously (for only 66 million units per day); oxytetracycline, 0.5 gm. orally every six hours, and probenecid. After five days, an additional 250 mg. of oxytetracycline was given every eight hours in each infusion of penicillin. Blood levels of 40 units per cubic centimeter of penicillin and 8 to 10 mcg. per cubic centimeter of oxytetracycline were obtained. Once again blood cultures be-

came sterile, but the patient's spleen became palpable and she developed distressing gastrointestinal symptoms with weight loss. She also developed extensive multilocular gluteal abscesses that had to be drained surgically, so that, after 18 days' treatment, when further intramuscular injections were impossible and all veins for intravenous administration of penicillin had been used, this therapy was discontinued. One week later blood cultures were positive again. While healing of the gluteal abscesses was awaited, the patient was given the following medication orally: tetracycline, 1 gm. per day, and benzathine penicillin G (Bicillin), 10 million units per day, with probenecid; but the blood levels of penicillin were only 0.2 units per cubic centimeter, and the blood cultures remained positive. A combination of neomycin, bacitracin, and streptomycin, which was particularly effective in vitro, had to be discontinued after 36 hours because of a return of the albuminuria and extreme pain in the quadriceps injection site.

With a return of fever spiking to 102 F (38.8 C), the situation became increasingly desperate. A reevaluation of the organism's sensitivities indicated that 3 mcg. per cubic centimeter of erythromycin was inhibitory. It was hoped that high blood levels of this drug maintained by a constant infusion would be effective where oral and intermittent intravenous administration had failed previously. Consequently 2 gm., increased after one week to 4 gm., of erythromycin was given daily, intravenously, for six weeks. In addition, 40 million units of penicillin was given daily intravenously for the first 18 days, empirically. A polyethylene catheter inserted into the lower saphenous veins caused much local thrombophlebitis and temperature spikes despite the use of heparin in the infusions. Finally, although the catheter was threaded from the femoral triangle far into the iliac vein, it was not until intravenous administration of penicillin was discontinued that these complications ceased. For the last three and one-half weeks, 4 gm. of erythromycin (plus heparin) was administered daily without incident, and blood levels of 12 to 18 mcg. per cubic centimeter were maintained. During this course, as before, blood cultures became sterile, but this time there was no recurrence of bacteremia after treatment. At the time of writing, four months after treatment, blood cultures are reported to be sterile. The patient writes that she is at home, gradually gaining weight and strength, and has had no evidence of congestive heart failure on a regimen of digitoxin and limited activity. Her main complaint is dizziness and ataxia, which is essentially unchanged since discharge and probably is a result of streptomycin intoxication.

COMMENT

This case illustrates the value of laboratory determinations of bacterial sensitivities and blood levels of the drugs used as aids to adequate antibiotic treatment of subacute bacterial endocarditis caused by an antibiotic-resistant organism. It also shows the effectiveness and freedom from toxic effects of intravenous administration of a relatively new antibiotic that was previously considered to be only bacteriostatic, like the other broad-spectrum antibiotics. The importance of erythromycin alone in effecting the cure in this case is impossible to assess because of the concomitant administration of penicillin for the first 18 days of treatment. A synergistic effect was hoped for, and cannot be ruled out, although it is noteworthy that a larger daily dose of penicillin (66 million units) with oxytetracycline, a known in vitro synergistic combination, failed to cure. It is unfortunate that in vitro synergistic tests of penicillin and erythromycin in combination were not carried out against this organism, especially since synergism is postulated in erythromycin-streptomycin combination.[1] At the time of this work a report on the only long-term clinical experience with intravenously given erythromycin had not been published; in this experience 3.5 gm. was administered daily for two weeks to a 30 lb. (13.6 kg.) child with subacute bacterial endocarditis. This case has now been reported, along with other observations on the effectiveness of intravenously given erythromycin.[2]

SUMMARY

The cure of a case of subacute bacterial endocarditis caused by a nonhemolytic Streptococcus, resistant to large doses of antibiotics, was effected by the use of erythromycin, 4 gm. daily, in a continuous intravenous drip for six weeks. No toxic effects of this drug were noted. There was a possible synergistic effect from 40 million units of penicillin added daily to the erythromycin infusion for the first 18 days. An indwelling polyethylene catheter was effectively used for the long-term administration of a heparinized infusion of the antibiotic.

ADDENDUM

In May, 1955, 10 months after discharge from the hospital, follow-up showed sterile blood cultures and slight cardiac enlargement on x-ray. The patient was continuing to improve her exercise tolerance within narrow limits and still required digitalis and had some degree of ataxia.

620 W. 168th St. (32) (Dr. Bishop).

1. Geraci, J. E., and Martin, W. J.: Antibiotic Therapy of Bacterial Endocarditis: Therapeutic Considerations of Erythromycin, Proc. Staff Meet. Mayo Clin. **29**: 109 (Feb. 24) 1954.

2. Johnson, T. D., and Hurst, J. W.: Bacterial Endocarditis Due to a Penicillin-Resistant Staphylococcus: Report of a Case Successfully Treated with Erythromycin, Oxytetracycline and Streptomycin, New England J. Med. **251**:219 (Aug. 5) 1954. Geraci, J. E.; Martin, W. J.; Nichols, D. R., and Larson, L. W.: Intravenous Use of Erythromycin Glucoheptonate, Proc. Staff Meet. Mayo Clin. **29**:536 (Sept. 15) 1954.

HAZARD OF CORTICOTROPIN AND CORTISONE THERAPY IN PATIENTS WITH HYPERCHOLESTEREMIA

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Thromboembolic phenomena may represent a serious complication of the use of corticotropin and cortisone.[1] These complications were observed in five patients with hypercholesteremia, idiopathic or secondary to other disease, leading to the impression of a causal relationship between the preexisting elevated level of serum cholesterol and the thromboembolic phenomena.

REPORT OF CASES

CASE 1.—A 52-year-old female was hospitalized on Feb. 21, 1952, because of diarrhea and abdominal pain. For two years prior to admission, she had been subject to intermittent attacks of severe abdominal cramps and diarrhea. The stools were foul-

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This study was supported in part by a research grant from the National Institutes of Health, United States Public Health Service.

Dr. Hyman Katz, Veterans Administration Hospital, Brooklyn, N. Y., gave permission to use data presented in two of the cases.

1. (*a*) Smith, R. W.; Margulis, R. R.; Brennan, M. J., and Monto, R. W.: The Influence of ACTH and Cortisone on Certain Factors of Blood Coagulation, Science **112**: 295, 1950. (*b*) Cosgriff, S. W.; Diefenbach, A. F., and Vogt, W., Jr.: Hypercoagulability of the Blood Associated with ACTH and Cortisone Therapy, Am. J. Med. **9**: 752, 1950. (*c*) Cosgriff, S. W.: Thromboembolic Complications Associated with ACTH and Cortisone Therapy, J. A. M. A. **147**: 924 (Nov. 3) 1951.

smelling and foamy. She complained frequently of bloating and postprandial discomfort. Study in 1950 revealed a normal gastrointestinal x-ray series and barium enema. Repeated stool analyses showed many fat globules, no ova or parasites, and a negative guaiac reaction. The hemoglobin level was 11.4 gm. per 100 cc. The white and differential blood cell counts were normal. On therapy consisting of a sprue diet supplemented with folic acid, she showed gradual improvement. Three days prior to admission, however, she again began to have severe abdominal pains, with as many as 20 diarrheal movements daily. Hospitalization was necessary because of marked dehydration.

Physical examination revealed an acutely ill female. There was marked dehydration of skin and mucous membranes. Blood pressure was 115/72 mm. Hg; pulse, 88 per minute; respiration, 20 per minute; and temperature, 98.6 F (37 C). The abdomen was somewhat distended and diffusely tender. Physical examination was otherwise negative. Urinalysis was normal. Hemoglobin level was 12.6 gm. per 100 cc.; white blood cell count was 8,750 per cubic millimeter, with segmented cells 53%, nonsegmented 10%, lymphocytes 33%, monocytes 4%, and reticulocytes 0.4%. Sedimentation rate was 60 mm. per hour (Westergren). Stool examinations revealed a few fat globules, no ova or parasites, and a negative guaiac reaction. Serum cholesterol level was 314 mg. per 100 cc. The oral glucose tolerance test (100 gm. glucose) was flat. A gastrointestinal x-ray series revealed a mild deficiency pattern.

Serum Lipid Levels of Three Patients and Their Close Blood Relatives

	Level, Mg. per 100 Cc.		
	Cholesterol/ Esters	Phospho- lipids	Total Lipids
Patient in case 1	314/245	305	1030
Sister, aged 63	289/212	311	....
Sister, aged 48	281/204	325	....
Patient in case 2	298/...	335	900
Mother, aged 78	308/224	316	1200
Brother, aged 52	298/227	275	1550
Brother, aged 50	212/160	225	670
Brother, aged 48	288/232	275	1050
Sister, aged 41	257/226	330	810
Patient in case 3	382/284	398	1230
Sister, aged 40	167/124	200	555
Sister, aged 37	319/228	290	900

For the first two days, treatment consisted of intravenous infusions supplemented with vitamins. Temperature was slightly elevated for the first four days. In view of the tentative diagnosis of sprue and because of the persistence of abdominal pain and diarrhea, therapy with corticotropin (ACTH) gel by intramuscular injection was instituted. The following doses were given: March 15, 20 mg.; March 16, 80 mg.; and March 17, 80 mg.—a total of 180 mg. On this therapy, the abdominal pain disappeared, the bowel movements diminished to two daily, and the patient became euphoric. On the morning of March 18, she was awakened by crushing anterior chest pain. She was acutely ill, orthopneic, and cyanotic. Blood pressure was 146/85 mm. Hg and pulse rate was 110 per minute. The heart sounds were of good quality. The electrocardiogram revealed S-T and T-wave changes suggesting coronary insufficiency. Corticotropin therapy was discontinued. On the following day, the condition remained critical. She suffered another attack of crushing precordial pain accompanied by profuse diaphoresis. The blood pressure was 150/90 mm. Hg; the pulse, 132 per minute; and temperature, 101 F (38.3 C). The electrocardiogram revealed depression of S-T in lead 2 and inversion of T wave in lead 3. The clinical impression was that of an acute myocardial infarction. Treatment with bishydroxycoumarin and digitalis was instituted. Meperidine (Demerol) was required repeatedly for chest pain. On the third day a loud precordial friction rub was heard. Sedimentation rate rose from 33 to 65 mm. per hour. On March 22, the electrocardiogram showed further S-T depression and T wave inversion. Her condition gradually improved. On April 9, the electrocardiogram was normal. Since discontinuation of corticotropin therapy, she has had no further diarrhea and only minimal abdominal discomfort. Because of the elevated levels of her serum cholesterol (314 mg. per 100 cc.), the patient's siblings who were clinically well were studied. The data are summarized in the table.

CASE 2.—A 38-year-old male was hospitalized in May, 1953, because of pain and swelling of the ankles and hands of five weeks' duration. The patient gave a history of two or three attacks of joint pain and swelling yearly since 1943. Therapy (salicylates) in previous attacks gave only partial relief. For the present attack, he took cortisone irregularly in doses of 100 to 150 mg. daily for several days without relief. Physical examination revealed a well-developed obese male. Tenderness was present over the internal and external malleoli bilaterally and over the phalangeal heads on the undersurface of the toes of both feet. He was unable to flex the third and fourth fingers of the right hand, and there was redness and swelling of the interphalangeal joints. The physical examination was otherwise within normal limits. The blood cell count revealed 10,400 white blood cells per cubic millimeter with a normal differential count; hemoglobin level, 15.3 gm. per 100 cc.; sedimentation rate, 5 mm. per hour; hematocrit value, 52%. Urinalysis was normal. Serum uric acid level was 3.5 mg. per 100 cc. Antistreptolysin titer was less than 100 units. Roentgenograms of the involved joints showed no abnormalities.

For four days after admission, the patient received salicylates with no improvement. Ten days after admission, therapy with cortisone, given orally in doses of 200 mg. daily, was instituted. After 13 days, the patient felt so well that he was permitted to leave the hospital on a pass. On the same afternoon, while changing an automobile tire, he developed sudden severe pain in his right lower chest. The pain was aggravated by deep breathing and coughing and was accompanied by diaphoresis and severe headache. Despite bed rest, cough and chest pain increased in severity and the patient returned to the hospital. At this time he was complaining of excruciating precordial pain radiating down the right arm and of severe coughing.

Physical examination revealed a desperately ill male. Temperature was 104 F (40 C) and pulse rate, 120 per minute. The patient was extremely apprehensive, covered with perspiration, and was in marked distress from the chest pain. There was dulness at the right lung base, with decrease in breath sounds and tactile fremitus in this area. There was no evidence of peripheral venous thrombosis. The electrocardiogram revealed a deepening of S in leads 1 and AVL, with lowering of T waves in leads 1, V_5, and V_6. Roentgenogram of the chest revealed an infiltration at the right base compatible with pulmonary infarction. Shortly thereafter he began to expectorate blood-tinged sputum. A pleural friction rub was heard at the right base. Anticoagulant therapy was instituted with heparin and bishydroxycoumarin. At this time clotting and prothrombin values were normal. For the next five days, the patient's condition remained critical, with persistence of cyanosis, tachypnea, hemoptysis, fever, and leukocytosis. Roentgenologic changes and clinical signs consistent with small infarctions in the opposite lung field appeared during this period. The patient's condition improved slowly. The fever persisted for 10 days and the chest signs for 20 days. At this point anticoagulant therapy was discontinued and the patient was discharged. In view of the observations made concerning familial hypercholesteremia in case 1, serum cholesterol studies were performed in the patient. The level was 298 mg. per 100 cc. The results obtained in his immediate family are summarized in the table.

CASE 3.—A 40-year-old male was hospitalized because of sudden onset of severe anterior chest pain. He had suffered a myocardial infarction at the age of 36. At this time xanthoma tendinosum over the metacarpophalangeal joints of both hands and of the Achilles tendons was noted. His father died of myocardial infarction at the age of 52. Four days prior to the current admission he took hydrocortisone, in doses of 20 mg. several times daily, for gouty arthritis. He had taken a total of 220 mg. of the drug when he was seized with sudden precordial chest pain radiating to the back and neck. The pain was aggravated by respiration and was accompanied by a temperature of 102 F (38.9 C). Two days later, x-ray examination revealed blunting of the left phrenicocostal sinus. The electrocardiogram showed changes consistent with the diagnosis of an old myo-

cardial infarction. The clinical impression was that the patient had suffered a pulmonary embolus. Recovery was uneventful. Serum cholesterol level when first observed was 440 mg. per 100 cc., falling to 322 mg. per 100 cc. on a low-fat, low-cholesterol diet. Serum uric acid level was 7 mg. per 100 cc. The serum cholesterol levels of the patient's siblings are presented in the table.

CASE 4.—A 47-year-old female with known duodenal ulcer and rheumatoid arthritis was hospitalized because of melena. For the past eight years she had been suffering from severe rheumatoid arthritis involving multiple joints of the extremities. Because of progressive disability and failure to respond to other forms of antirheumatic therapy, a course of cortisone therapy was thought to be indicated. The duodenal ulcer, which had been demonstrated radiologically several years previously, was considered to have healed under appropriate therapy. Consequently, for the four months prior to admission, she received cortisone orally, in doses of 100 mg. daily in divided doses. On this therapy there was considerable symptomatic improvement. One day prior to admission she began feeling faint and noticed melena. She was hospitalized and given a transfusion. Cortisone therapy was discontinued. On the day after admission, she suddenly developed precordial pain and dyspnea. Examination at this time revealed extreme respiratory distress, tachypnea, orthopnea, and cyanosis. Blood pressure was 95/65 mm. Hg; pulse rate, 100 per minute; respiration, 30 per minute; and temperature 100 F (37.8 C). There were diminished breath sounds at the right base and coarse rales at the left base. Examination of the heart revealed sinus tachycardia; the second pulmonic sound was accentuated. Sedimentation rate was 100 mm. per hour (Westergren) and hemoglobin level, 10 gm. per 100 cc.; white blood cell count was 10,000 per cubic millimeter, with a normal differential count. Chest roentgenogram revealed fluid at the right base, increased markings, and multiple plate-like areas of atelectasis at both bases. Electrocardiogram showed low T waves in leads 2, V_5, and V_6. Repeated electrocardiograms showed diphasic T waves and depressed S-T segments in the precordial leads. Cholesterol level was 390 mg. per 100 cc., with 250 mg. per 100 cc. esters. The diagnosis of multiple pulmonary infarctions was made. The patient was treated with bed rest, oxygen, antibiotics, and digitalis. Her condition remained critical for two weeks and improved slowly thereafter. Analyses of serum cholesterol revealed values between 340 and 390 mg. per 100 cc., with esters 205 to 250 mg. per 100 cc. There were no members of the patient's family available for study.

COMMENT

Considerable attention has been accorded certain of the complications attending the use of corticotropin and the cortisones. Physicians are constantly alert to the possibility of ulcerations with bleeding and perforation of the gastrointestinal tract, alterations of cardiovascular dynamics including those caused by salt and water retention, and abnormalities in the central nervous system, to name but a few possible sequelae. The likelihood of the occurrence of thromboembolic phenomena, a complication of corticosteroid therapy more likely to terminate fatally, has received less prominence than its seriousness and incidence warrant.

The group of patients presented in this paper developed thromboembolism after the institution of corticotropin or cortisone therapy for a variety of diseases. There was a striking time relationship between the institution of hormone therapy and the onset of the complications. The ages of these patients ranged from 38 to 52. Two patients were men and two were women. One patient was treated for a sprue-like syndrome, one for gout, and two for rheumatoid arthritis. Study of the group revealed one common denominator, namely, elevation of the serum cholesterol level above the upper limit of normal (280 mg. per 100 cc. by the Schoenheimer-Sperry method). In three instances in which family members were available for study, the familial character of the abnormality was suggestive.

Several clinical observations deserve brief discussion. In the patient in case 1, a myocardial infarction occurred after only three days of corticotropin therapy. This relatively short duration of therapy, in our opinion, does not preclude the possibility of a causal relationship. Eisenmenger and his associates [2] have observed portal vein thrombosis occurring after even shorter periods of therapy (see below). The patient presented in case 2 was fully ambulatory for a period of two weeks prior to the occurrence of pulmonary infarctions. Consequently, we do not believe that the exertion of changing a tire was an important contributing factor. The patient presented in case 3 was the only person of the four showing evidence of preexisting cardiovascular disease. He developed a pulmonary infarction after a short period of hydrocortisone therapy. It was not our impression that there was any relationship between the pulmonary infarction and the myocardial infarction that had occurred four years previously. In the patient presented in case 4, it is difficult to evaluate the possible role of anemia. It must be stressed, however, that the anemia was of moderate degree. The clinical impression in all these patients was that corticotropin and cortisone might have been a contributing factor in the production of the thromboembolic phenomena.

Predisposition to vascular disease is a common accompaniment of the error of lipid metabolism of which hypercholesteremia is a part.[2a] One may then conclude that any drug associated with the risk of thromboembolism should be used with caution in patients in whom the predisposition to vascular disease already exists. Our observations are in agreement with those of other workers who encountered thromboembolic complications after the use of corticotropin and cortisone. Cosgriff and his co-workers [1c] observed 40 episodes of thromboembolism in 28 of 700 patients treated with corticotropin or cortisone. Smith [1a] and Cosgriff [1b] demonstrated that a state of hypercoagulability results from steroid therapy. Cosgriff [1b] emphasizes the necessity for maintaining an awareness of the potentiality of these agents for producing a prethrombotic state, particularly in patients in whom other factors are present that also predispose to intravascular thrombosis. To these other factors, which include infection, postoperative and postpartum state, malignancy, and bed rest, we would like to add, on the basis of our experience, an abnormal state of lipid metabolism manifested by hypercholesteremia. In these individuals the combination of the predisposition to vascular disease and the tendency to hypercoagulability may act synergistically in producing intravascular clotting.

Eisenmenger and co-workers [2] observed portal thrombosis in three patients treated with corticotropin for cir-

2. Eisenmenger, W. J.; Slater, R. J., and Bongiovanni, A. M.: Hypercoagulability of the Blood of Patients with Hepatic Cirrhosis Following Administration of ACTH, Am. J. Med. **13**: 27, 1952.

2a. Adlersberg, D.: Hypercholesteremia with Predisposition to Atherosclerosis: An Inborn Error of Lipid Metabolism, Am. J. Med. **11**: 600, 1951.

rhosis of the liver. Cessation of gingival bleeding was observed in four patients. Since patients with advanced cirrhosis exhibit deficiencies in blood coagulation factors, including plasma prothrombin, fibrinogen, and platelets, these observations were of additional importance. It is of interest, however, that Russek and co-workers [3] failed to observe a single instance of thromboembolism in 86 patients suffering from advanced cardiovascular and/or cerebral vascular disease, who were treated with large doses of cortisone. Fourteen of these patients were bedridden, while 72 were ambulatory or semiambulatory. In our opinion, there is considerable risk involved in the use of corticosteroid therapy in patients suffering from coronary disease. We have seen several thromboembolic complications in patients in this category treated with corticosteroids.

A question of practical importance concerns the use of anticoagulant therapy in individuals predisposed to vascular disease receiving corticosteroid therapy. Cosgriff [1c] and Eisenmenger [2] recommend the use of anticoagulants. The latter suggests the use of heparin in preference to bishydroxycoumarin. Russek [3] emphasizes that the potential dangers of anticoagulant therapy far outweigh those of corticosteroid therapy. The following case illustrates, however, the advisability of the use of anticoagulants in association with corticosteroid therapy in predisposed individuals.

CASE 5.—A 52-year-old man was suffering from the nephrotic stage of glomerulonephritis. He was treated with corticotropin and cortisone in an attempt to promote diuresis. He had had a myocardial infarction four years previously and subsequently had several attacks of angina pectoris. During the course of steroid therapy, he experienced attacks of crushing, severe chest pain, which subsided when the medication was discontinued. Although the electrocardiograms showed no changes, it was decided that, since these attacks were anginal in character, anticoagulants should be given in conjunction with the hormonal therapy. Whereas previously he had developed chest pains within a few days after the start of steroid therapy, he remained asymptomatic when anticoagulants were used simultaneously. On a subsequent occasion when cortisone was given without anticoagulants, he developed anginal pain and electrocardiographic evidence of acute myocardial infarction. The serum cholesterol level of this patient was in the range of 500 mg. per 100 cc.

SUMMARY

Four patients, ranging in age from 38 to 52 years, suffered thromboembolic accidents while undergoing treatment with corticotropin or the cortisones for a variety of illnesses. Serum cholesterol level was elevated in all of these patients, only one of whom had clinically evident preexisting cardiovascular disease. Examination of the members of the three families available for study defined the hypercholesteremia as being familial in nature. We suggested that the hypercoagulability induced by the corticosteroids, when superimposed on the vascular disease that may be associated with this metabolic error, acts synergistically to predispose the individual to thromboembolic phenomena. Caution in the administration of steroid therapy to hypercholesteremic individuals is advised. Prophylactic anticoagulant therapy may be indicated in some instances.

Fifth Avenue and 100th Street (29) (Dr. Adlersberg).

3. Russek, H. I.; Zohman, B. L., and Russek, A. S.: Risk of Thromboembolic Complications from Cortisone Therapy, Am. Heart J. **47**: 653, 1954.

PARAGONIMUS WESTERMANI INFESTATION INVOLVING THE ANTERIOR ABDOMINAL WALL

REPORT OF A CASE SIMULATING ACUTE APPENDICITIS

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As the geographical distribution [1] of Paragonimus westermani infestation in humans is generally confined to the Far East, and especially to parts of Japan, Korea, and Formosa, it is not expected that the American physician would ordinarily come in contact with patients harboring these parasites. The quartering of our troops in Japan, however, and especially the recent campaigns in Korea, should make us more alert to the possibility of eventually finding various disease syndromes attributed to this worm in American veterans. The case about to be discussed, while concerning a Korean woman temporarily residing in the United States, is of especial interest because of the rare involvement by the parasite of the anterior abdominal wall, so that the clinical picture of acute appendicitis was simulated.

The usual life history of Paragonimus westermani is as follows: The eggs are generally passed in the sputum or feces and under suitable conditions develop into two larval stages within the fresh-water mollusk host and fresh-water crabs and crayfish hosts respectively. If infested poorly cooked or raw crabs or crayfish are ingested, the encysted larva escapes from the digested cyst wall, penetrates the upper jejunum, and gains access to the peritoneal cavity. The parasite then penetrates the diaphragm to enter the pleural space and ultimately invade the lung, where maturation to an hermaphrodite adult worm takes place.

REVIEW OF PERTINENT LITERATURE

An extensive search through the literature reveals that the organisms may be found in many unusual locations within the human body, outside its natural and more usual habitat. Musgrave [2] in 1907 studied 17 cases, in 8 of which autopsy was done. Of the latter, skin lesions were present in two out of six cases where the skin was actually examined. Two out of eight cases showed lesions in the pectoral major muscle, and in three the psoas or other muscles contained abscesses.

A case similar to that of this paper was described by Choy and Ludlow [3] in 1926. These authors described a 25-year-old Korean male with a tumefaction in the epigastric region. Ova of Paragonimus were found in the sputum and feces. At operation, a vascular lesion was found adherent to the skin and muscle fascia. This was removed and the ova of the parasite identified within the vascularized connective tissue stroma. At follow-up, no ova could be discovered again within sputum or feces. The authors stated that this was the first case with in-

From the Department of Surgical Pathology, Medical College of Virginia.

1. Blacklock, D. B., and Southwell, T.: A Guide to Human Parasitology for Medical Practitioners, ed. 2, Baltimore, William Wood & Co., 1935, pp. 152-153.

2. Musgrave, W. E.: Paragonimiasis in the Philippine Islands, Philippine J. Sc. **2**: 15-65, 1907.

3. Choy, P. D., and Ludlow, A. I.: Ova of Paragonimus Westermanii Encysted in Abdominal Wall, China M. J. **40**: 326-328, 1926.

volvement of the abdominal wall to be found in Korea and that they could find no similar case recorded in the Western literature. Several references were appended, however, from the Japanese literature concerning parasites or ova found outside the lung. Choy and Ludlow [4] in 1931 subsequently reported two cases of Paragonimus encysted within the omental contents of inguinal hernial sacs.

Fig. 1.—Granulomatous reaction in abdominal mass with central cystic degeneration (× 60).

In 1934 Bercovitz and Rogers [5] described the case of a 29-year-old Korean woman. She was admitted with abdominal swelling of several years' duration following a previous removal of large ovarian cysts. Following paracentesis an exploratory operation was done and the peritoneum found studded with vesicles. The mesenteric nodes were enlarged, and the clinical impression was abdominal carcinomatosis. Masses from the omentum as well as mesenteric nodes were excised for study, and these showed the ova of Paragonimus westermani. No adult worms were found.

A case involving the abdominal wall was also reported by Ko[6] in 1939. A 9-year-old Formosan boy had a mass in the left side of the abdomen that was associated with fever. Incision produced brown-yellow pus, and examination of discharges and curettings from the sinus wall showed many ova of Paragonimus. The author concluded that the origin of these ova was apparently from the migration of a fluke from the intestines to the muscles of the abdominal wall, where the eggs were subsequently laid to produce an abscess. A later check of the patient revealed cough and occasional ova within the sputum. A somewhat similar case was reported in 1947 by Pesigan and others.[7] A 28-year-old male Filipino was discharging pus through the umbilicus. At operation, a granulomatous mass was found attached to the umbilicus between the peritoneum and rectus sheath. Eggs of Paragonimus were identified in the granuloma, and serial sections failed to reveal an adult fluke.

Canizares and Celis [8] in 1951 reviewed their experiences with paragonimiasis seen at the Quezon Institute during the previous five years. They cited the rare invasion by the fluke into skin and muscle but gave no specific example. More recently Roque and others [9] discussed involvement of the skeletal muscles by the parasite, as well as lesions in the skin and subcutaneous tissues. Such involvement was presumed to be due to hematogenous dissemination.

REPORT OF A CASE

The patient, a 29-year-old Korean woman, was awakened at 1 a. m. by dull, aching pain in the right lower quadrant of the abdomen. Nausea and vomiting developed one-half hour later. This episode had been preceded the night before by localized myalgia. The pain had lessened somewhat after the attack of nausea and vomiting, but direct and rebound tenderness was quite marked over McBurney's area on physical examination. There were no other positive findings. History revealed infestation in Korea with Ascaris lumbricoides, but stools had become negative after medication. There was also a history of rather severe dysmenorrhea. The laboratory data showed a white blood cell count of 16,650 per cubic millimeter, with differential of 83% polymorphonuclear leukocytes, 16% lymphocytes, and 1% monocytes. The hemoglobin level was 12.4 gm. per 100 cc. The urine was essentially negative. The patient was operated on at 2:30 p. m., the day of the attack, after a diagnosis of acute appendicitis had been made.

On exploration a mass approximately 4 cm. in maximal diameter was found between the peritoneum and transversalis muscle, just below the McBurney incision. The mass was poorly circumscribed, appeared to involve a portion of the muscle, and showed a central excavation that communicated with the peritoneal cavity. The appendix, cecum, and terminal ileum appeared normal. The mass as well as the appendix was excised. The patient has remained perfectly well after operation. A follow-up chest roentgenogram was normal, and the patient has been unable to produce any sputum for examination for ova. To this writing all stool specimens have shown only ova of Trichuris trichiura and Trichostrongylus orientalis.

Fig. 2.—Higher magnification of right margin of figure 1 to show many well-defined ova (× 150).

4. Choy, P. D., and Ludlow, A. I.: Paragonimus Westermanii Encysted in Sac of Inguinal Hernia, China M. J. **45**: 556-559, 1931.

5. Bercovitz, Z., and Rogers, J. M.: Paragonimus Westermanii: Report of Case Presenting Abdominal Involvement, Puerto Rico J. Pub. Health & Trop. Med. **9**: 492-496, 1934.

6. Ko, E.: Paragonimus Westermanii Abscess in Lower Abdominal Wall, Taiwan Igakkai Zassi **38**: 544, 1939.

7. Pesigan, T. P.; Torres, L. F., Jr., and Recio, P. M.: Paragonimiasis Westermani: Unexpected Case with Cystic Formation in Anterior Abdominal Wall, J. Philippine M. A. **23**: 293-298, 1947.

8. Canizares, M., and Celis, J.: Observations on Paragonimiasis at the Quezon Institute, Dis. Chest **19**: 668-675, 1951.

9. Roque, F. T.; Ludwick, R. W., and Bell, J. C.: Pulmonary Paragonimiasis: A Review with Case Reports from Korea and the Philippines, Ann. Int. Med. **38**: 1206-1221, 1953.

PATHOLOGICAL FINDINGS

The extraperitoneal mass measured 4 by 2.5 by 1.5 cm. On cut section, gray, glistening tissue containing several cysts was revealed. These ranged from 5 to 18 mm. in diameter and had a dark red, rough lining. Light tan areas were also noted in the solid regions. The appendix was not remarkable. Microscopically the mass consisted of dense fibrous scar tissue and fat, which were the seat of multiple foreign-body-type granulomas. Some of the granulomas showed cystic degeneration, and there was a lining of epithelioid cells covered with a necrotic membrane (fig. 1). Within the cavity, as well as within the necrotic tissue and walls of the granulomas, there were numerous ova (fig. 2). The latter were generally oval and showed a thick yellow shell (fig. 3). Opercula could be identified in some of the ova, which also showed developing embryos (fig. 3). Though serial sections were made of the tissue, no adult worm was seen. The slides were shown to Dr. E. C. Nelson of the department of parasitology, who identified the ova as definitely belonging to Paragonimus westermani.

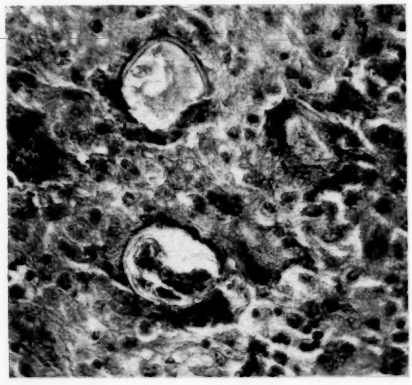

Fig. 3.—High-power view of ova to show greater detail. Note doubly contoured shell and developing larva in lower ovum (× 450).

COMMENT

The association of a simulated attack of appendicitis and paragonimiasis of the anterior abdominal wall must be a rare phenomenon. The granulomatous abscess caused by the ova of the worm was undoubtedly responsible for the localized pain in the right lower quadrant, since surgical removal has rendered the patient free of all symptoms. The systemic findings of nausea and vomiting are a little more difficult to explain but can be accounted for on the basis of absorption of toxic products caused by destruction of tissue.

The localization of the eggs of the parasite in the abdominal wall is a puzzling feature. The worm must have migrated to this site and subsequently died, since none could be found after serial sectioning of the surgically removed tissues. Whether migration took place from the intestine [6] or by way of the blood stream [9] cannot be proved, though the former method seems most probable. It is unlikely that the fluke has reached its usual site of the lung, since the patient has no cough or sputum and a chest roentgenogram is entirely negative.

SUMMARY

In a case of Paragonimus westermani infestation involving the anterior abdominal wall the patient had a simulated attack of acute appendicitis necessitating abdominal exploration. A poorly circumscribed mass was found in the anterior abdominal wall, which on removal was found to consist of a granulomatous abscess caused by the ova of Paragonimus westermani. The patient has been entirely free of symptoms after surgery, and follow-up studies of stool specimens have revealed no ova of Paragonimus.

1200 E. Broad St. (19).

EFFECT OF TOPICALLY APPLIED ANTIBIOTIC AGENTS ON AXILLARY ODOR

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The distinctive odor of the axilla in man has long been correlated with the unique presence of apocrine sweat in this area. Recently, it has been shown that this odor is not an intrinsic property of apocrine sweat when it first appears on the skin surface.[1] It was found that the characteristic odor developed only after the normal surface bacteria had acted upon the apocrine sweat. This phenomenon of odor production by bacteria could be observed in vivo or in vitro. Also, it was discovered that the intensive use of the antibacterial hexachlorophene detergents could abolish odor for more than 18 hours in most individuals. The present study was undertaken to determine the effectiveness of topically applied antibiotic therapy on the inhibition of axillary odor.

MATERIAL

The following five preparations and control vehicles were studied as pairs, one being applied to each axilla, according to the method discussed below: (1) Myciguent cream, a cream containing 5 mg. of neomycin sulfate per gram (equivalent to 3.5 mg. neomycin base), and Myciguent cream base (control), a water-washable, nongreasy vanishing-type cream base containing methyl paraben 0.1%; (2) Mycimist, a lotion containing 5 mg. of neomycin sulfate per cubic centimeter (equivalent to 3.5 mg. neomycin base), and Mycimist base (control), a lotion containing methyl paraben 0.1%, and *n*-butyl *p*-hydroxybenzoate 0.4%; (3) Spectrocin, an ointment containing 2.5 mg. of neomycin hydrochloride per gram of neomycin base and 0.25 mg. of gramicidin per gram, and Spectrocin base (control), a non-water-absorbing ointment containing 95% mineral oil and

From the Department of Dermatology, University of Pennsylvania School of Medicine.
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This study was supported by a contract from the Army.

1. Shelley, W. B.; Hurley, H. J., Jr., and Nichols, A. C.: Axillary Odor: Experimental Study of the Role of Bacteria, Apocrine Sweat and Deodorants, A. M. A. Arch. Dermat. & Syph. **68**: 430 (Oct.) 1953.

5% polyethylene; (4) Spectrocin lotion (not commercially available), a lotion containing 2.5 mg. of neomycin hydrochloride per cubic centimeter of base and 0.25 mg. of gramicidin per cubic centimeter, and Spectrocin lotion base (control), a lotion containing methyl paraben 0.2% and propyl paraben 0.02% in an aqueous vehicle; and (5) chloramphenicol (Chloromycetin) cream, a cream containing 10 mg. of chloramphenicol per gram of vehicle, and chloramphenicol cream base (control), a water-miscible cream containing 0.1% paraben. None of the preparations had a significant odor nor did they seem to mask odor.

TABLE 1.—*Effect of a Single Application of Antibiotic Creams on the Appearance of Axillary Odor in Man*

Single Treatment with	No. of Subjects with Complete Absence of Odor in Axilla *			
	1st Day	2nd Day	4th Day	8th Day
Myciguent cream	19	7	4	0
Chloramphenicol (Chloromycetin) cream	18	6	4	0
Myciguent vehicle	9	1	0	0
Chloramphenicol (Chloromycetin) vehicle	7	2	2	0

* Total number in each group: 25.

METHOD

The subjects were normal adult males who had not used axillary deodorants or antiperspirants for at least two months. In preliminary testing, all developed the typical axillary odor within 18 hours after washing the area with plain toilet soap and water.

An initial study was undertaken in the spring of 1954, to determine the effect of a single application of (1) Myciguent cream and (2) chloramphenicol cream. Twenty-five subjects were used in each of the two groups, and the antibiotic creams and placebo bases were applied immediately after washing the axilla to the point where no odor was detectable. No further applications or washings were permitted. Observations were made after one, two, four, and eight days (table 1).

In the fall of 1954 study was made of the effect of repeated daily application of each of the five antibiotic preparations and control bases to the axilla of 10 men. The first application was made immediately after the axilla had been washed free of odor. Then the antibiotics were applied liberally twice each day. Washing, shaving, and other topical applications were completely interdicted. Final readings were made two weeks later, 18 hours after the last application of the topically applied antibiotic and its paired control (table 2). Odor was simply recorded as present or absent. No attempt was made at grading or quantitation. Previous study had indicated the difficulties of measuring the degree or amount of odor, even with instrumentation. At all times the observers were kept ignorant of the treatment or procedures used by the subjects. The results are tabulated in tables 1 and 2.

COMMENT

Previous study [1] has shown micrococci (staphylococci) to probably be responsible for production of axillary odor. They are commonly the predominant flora of the normal human axilla. In this investigation neomycin in a concentration of 3.5 mg. base per gram proved to be the most effective topically applied agent. This might be expected on the basis of the work of Livingood and his associates [2] who demonstrated in vitro that neomycin is superior to all other antibiotics in regard to its effect on all strains of staphylococci. The present work adds confirmatory evidence that bacteria are the primary cause of axillary odor. The daily application of a neomycin cream or lotion was completely effective in preventing the appearance of any axillary odor in all of the subjects tested. It appears, however, that only repeated applications of neomycin in a concentration of 3.5 mg. of base per gram or more will prevent this formation of odor in the axilla.

TABLE 2.—*Effect of Application of Antibiotic Preparations Twice Daily for Two Weeks on Axillary Odor in Man* *

	Treatment									
	Patients					Controls				
	Myciguent Cream	Mycimist	Spectrocin Lotion	(Chloramphenicol (Chloromycetin) Cream	Spectrocin	Myciguent Cream Base	Mycimist Base	Spectrocin Lotion Base	(Chloramphenicol (Chloromycetin) Cream Base	Spectrocin Base
No. of subjects † with complete absence of odor 18 hr. after last application ‡	10	10	8	7	6	5	2	2	0	1

* Shaving, washing, or other treatment of area not permitted.
† Total number in each group: 10.
‡ Seven days after last application all subjects had strong axillary odor.

2. Livingood, C. S.; Head, C. E.; Sutter, R. M., and Engley, F. B., Jr.: Comparative Effects of Neomycin and Other Antibiotics on Pyogenic Bacteria. In Vitro Effect on Bacteria Isolated from Cutaneous Pyogenic Infections. A. M. A. Arch. Dermat. & Syph. 69:43 (Jan.) 1954.

3. Nitta, H., and Ikai, K.: Studies on the Body Odor. I. Separation of the Lower Fatty Acids of the Cutaneous Excretion by Paperchromatography. Nagoya M. J. 3:217, 1953.

had received orally 2 gm. of chlortetracycline (Aureomycin) per day for three weeks were checked for axillary odor. All of them proved to have the characteristic odor. The second experiment was suggested by the observation of Kelley and Dittmer,[4] who found that milk from cows fed with menadione showed a lower rate of bacteriological souring than normal. Since apocrine sweat is a prototype of milk, it was reasoned that perhaps menadione was secreted by the apocrine as well as the mammary gland and that this could have a bacteriostatic effect on the axillary microflora with a consequent inhibition of axillary odor. Twenty men were given 50 mg. a day of menadione orally in divided dosage, and a control group of 20 was given placebo tablets. No difference in the axillary odor could be observed after one week of treatment.

SUMMARY AND CONCLUSION

Topically applied antibiotic agents have a considerable effect in preventing the appearance of normal axillary odor. The repeated application of neomycin cream or lotion (in a concentration of 3.5 mg. of base per gram of vehicle) completely inhibited the production of odor in the axilla of 20 men. This provides further evidence that axillary odor results from the action of bacteria on apocrine sweat. Clinically, the topically applied antibiotic agents provide an alternative measure for the patient who does not tolerate the standard aluminum salt deodorants.

4. Kelley, G. G., and Dittmer, K.: Milk Souring: Effect of 2-Methyl-1,4-Naphthoquinone on the Rate of Souring of Milk, J. Agric. & Food Chem. 2: 741, 1954.

THORACIC AORTOGRAPHY

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Translumbar aortography has proved to be a useful diagnostic procedure, but it has some limitations. One of these is the difficulty in visualizing lesions of the upper abdominal aorta. To overcome this difficulty or to visualize suspected lesions of the thoracic aorta, the needle through which the contrast medium is to be injected has been introduced through the left posterior thoracic wall to pierce the aorta above the diaphragm. The following technique has been employed satisfactorily for six patients during the past year.

MATERIALS AND METHODS

All food and drink is withheld for four to six hours before the procedure. The patient, with no premedication, is placed prone on a roentgenographic table with arms abducted and forearms flexed so that the left hand is near the face, which is turned to the left. A lead marker is placed over the spinous process of the fourth or fifth thoracic vertebra and a scout (preliminary survey) film is taken of the thorax below the lead marker and of the upper part of the abdomen, depending on the location of the suspected lesion. While the scout film is being developed, a needle is inserted in a vein in the middle third of the left forearm and, if not contraindicated, 50 to 100 mg. of meperidine hydrochloride is given slowly and cautiously. After this injection, an apparatus is attached to the needle for later administration of 2.5% solution of thiopental (Pentothal) sodium.

From observation of the wet scout film, the most advantageous site for introduction of the special aortography needle (Becton-Dickinson no. 462, LNR, 6 in., 18 gauge) is carefully selected. The site at which the thoracic aorta extends the greatest distance to the left of the midline is usually chosen. This probably will be over the interspace below the left fifth, sixth, or seventh rib and can be accurately located on the skin from the known relation to the position of the lead marker, which is visible on both skin and film. The skin and subcutaneous tissue at this site are infiltrated with about 10 cc. of 1% solution of procaine hydrochloride. All equipment having been prepared and a test dose of 3 or 4 cc. of thiopental sodium having already been given without unusual reaction, the patient is now given an additional 4 to 8 cc. of thiopental sodium, depending on his reaction to the test dose. A competent anesthetist must be responsible for the maintenance of a satisfactory airway at all times.

As soon as the patient becomes lightly anesthetized, the aortography needle is inserted perpendicularly to the skin to pass just to the left of the left lateral surface of the body of the appropriate vertebra and to pierce the thoracic aorta or the descending portion of the arch of the aorta. A sense of resistance to the passage of the needle followed by a sudden disappearance of this resistance is usually felt as the tip of the needle pierces the wall of the aorta. Spurts of bright red blood through the needle, when the stilet is removed, are evidence that the tip of the needle is in a large artery. The entire lumen of the tip of the needle must be in the lumen of the aorta at the time the contrast medium is injected in order to avoid periaortic injection. One end of a transparent plastic tubing is now attached to the hub of the aortography needle by means of a Luer-Lok adapter (Becton-Dickinson no. H/468L), and a 20 cc. syringe, filled with 19 cc. of isotonic sodium chloride solution and 1 cc. of contrast medium, is attached to the other end of the plastic tube through a Luer-Lok one-way valve (Becton-Dickinson no. L606 and LL/S1). Ten cubic centimeters of isotonic sodium chloride–medium mixture is injected and then pressure on the plunger is released to see if blood will flow back into the plastic tubing in spurts.

If no reaction to the test dose of medium occurs, a syringe containing 20 cc. of 70% sodium acetrizoate (Urokon) or 75% sodium iodomethamate (Neo-Iopax) is attached to the one-way valve in place of the isotonic sodium chloride containing syringe and all members of the team should prepare to carry out their part of the procedure at the proper time. Accurate timing is essen-

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tial for obtaining good roentgenograms with small amounts of medium. One member of the team should give the signals, usually the one performing the injection. The anesthetist gives 4 to 8 cc. of thiopental sodium and, as soon as this takes effect, the 20 cc. of medium is injected in two to three seconds. Just before the last of the contrast medium is injected, the roentgenogram is taken, using an exposure time of 0.1 second. All needles should be left in place until the wet film can be studied for the information desired. If necessary, a second injection of medium and a second aortogram may be made.

COMMENT

By means of thoracic aortography in these six patients the following diagnoses were made: two aneurysms of the thoracic aorta (see figure) associated with fusiform dila-

Thoracic aortogram showing two aneurysms of distal thoracic aorta.

tation of the abdominal aorta, one aneurysm of the hepatic artery, one arteriovenous fistula between right renal artery and vein, and two normal aortas for which abdominal exploration had been recommended after the clinical diagnosis of aneurysm of the proximal part of the abdominal aorta. In spite of no complications having occurred in these patients, thoracic aortography is not recommended as a routine procedure, but we believe it is a valuable diagnostic aid for special problems. Pneumothorax and hemorrhage from puncture of the aorta or intercostal arteries were carefully looked for after each of these procedures, but none occurred.

CONCLUSIONS

Transthoracic aortography is a valuable aid in diagnosing lesions of the lower thoracic aorta and the upper abdominal aorta and its branches.

DIAGNOSTIC PROBLEMS

PRESENTATION OF CASE

James M. Kidd, M.D., Chicago

In February, 1948, a 5-year-old girl had measles followed by chickenpox. During this time she began to have attacks of abdominal pain associated with vomiting. At times the vomitus was said to contain small blood clots. These episodes lasted two or three days and were infrequent. In August they became more severe and more frequent, occurring every week and associated with a temperature of 102 to 103 F (38.9 to 39.4 C). She was able to go to school between attacks, but her teachers stated that she seemed to be listless. In November, December, and January she received combined diphtheria, pertussis, and tetanus immunization. She was sick after each dose. On Jan. 27, her mother noted a yellow tint to her scleras, and within a week her skin was definitely jaundiced. Associated with the onset of visible icterus was the presence of dark urine and white stools. On a fat-free diet the jaundice lessened but did not entirely clear. In the next two months she had two similar episodes in which the jaundice became more intense and was associated with abdominal pains and white stools. On April 22 she was admitted to the hospital.

Physical Examination.—On admission the patient was moderately jaundiced and had an enlarged, firm, tender liver, whose edge extended two fingerbreadths below the right costal margin. The spleen was not palpable, and no lymphadenopathy was present.

Laboratory Findings.—Icteric index was 91 units; van den Bergh gave strong direct and indirect reactions; total protein level was 9.6 gm. per 100 cc.; albumin level was 4 gm. per 100 cc.; globulin level was 5.6 gm. per 100 cc.; cephalin flocculation test was 4+; cholesterol level was 200 mg. per 100 cc.; cholesterol esters, 70 mg. per 100 cc.; urine, 4+ bile and urobilinogen 0.7 mg. per 100 cc. on a single voided specimen; stool tests were negative for bile and urobilinogen was 2+; and blood cultures were negative.

Course.—The patient remained at bed rest for three weeks and received a high-protein, high-carbohydrate, high-vitamin diet. Her jaundice lessened, the icteric index decreasing to 62. Her stools remained pale but not completely acholic. She was sent home on May 12. Following discharge she felt generally better, but the icterus did not lessen and a history of intermittent light and dark stools was obtained. The urine was persistently dark and always contained bile, and the liver remained enlarged. Her icteric index on June 18 was 143 units and on Aug. 15 was 123 units. She was readmitted at this time, and a liver biopsy showed disruption of liver cell cords. The liver cells were large, swollen, and granular, and many cells contained four to eight nuclei. The laboratory findings were essentially the same as those found three months earlier.

From the Otho S. A. Sprague Memorial Laboratory, Children's Memorial Hospital.

In the next two years she was followed in the clinic, during which time she had infrequent attacks of asthma. Jaundice, to some extent, was always present, and her liver remained firm and enlarged. On Nov. 19, 1951, this child, then 9 years old, was again admitted to the hospital. She appeared critically ill and complained of abdominal pain of sudden onset and diarrhea of one day's duration. A roentgenogram of the abdomen revealed no evidence of intestinal obstruction but did reveal an oval density in the right upper abdominal quadrant. There was a "ground glass" appearance to the rest of the abdomen. The patient was still moderately icteric. Her liver extended to the level of the umbilicus, and a fluid wave was demonstrable by abdominal palpation. An abdominal paracentesis was performed, and 600 cc. of sterile bile-containing fluid with 16.5 mg. of protein per 100 cc. was removed. She was discharged after four weeks improved and was readmitted on Feb. 7, 1952, with a history of low-grade fever and severe pain in the right side of the abdomen associated with anorexia of six weeks' duration and a more constant low-grade fever of 12 days' duration. On admission the liver was palpable in the epigastrium but not below the right costal margin. A firm spleen was felt five fingerbreadths below the left costal margin. The skin was clear and nonicteric. The abdominal pain disappeared soon after admission, and after an intravenous pyelogram, which revealed no abnormality, the child was discharged on the sixth day.

She was readmitted on March 6, 1954. She was then 11 years old and for the past 18 months had been permitted fairly normal activity. Except for an occasional feeling of fatigue she felt generally well. For three weeks prior to admission she had noted blood in her urine. For two weeks previously she had rectal bleeding. Bleeding from the gums of two days' duration was also noted. Physical examination revealed her liver to be enlarged to two fingerbreadths and her spleen to three fingerbreadths below the costal margin, both being firm to palpation. Her skin was pale but not icteric. She exhibited palmar erythema, skin atrophy, multiple telangiectasia, and several spider angiomas. A complete genitourinary study revealed no source of bleeding. Fluoroscopy of the esophagus failed to demonstrate any varices. A cholecystogram revealed poor visualization of the gallbladder about the previously noted opacity, which has increased somewhat in size. The patient's prothrombin time was slightly increased. A sigmoidoscopic examination added no further information. The urine became free of blood, and she was discharged.

She returned to the hospital in May, 1954, and a contracted, deformed gallbladder, containing no bile but two moderate-sized pigmented stones, was removed. The liver was described as being small, firm, and nodular. A biopsy specimen was taken, and sections revealed prominent perilobular fibrosis, round cell infiltration, and proliferation of bile ducts. The patient's postoperative course was unremarkable, and she was discharged on the 12th day. In November she was readmitted, complaining of progressive abdominal swelling of one month's duration and swelling of the feet for two days prior to admission. Physical examination revealed mild scleral icterus, hepatosplenomegaly, ascites, and peripheral pitting edema of the lower extremities. Blood studies revealed further reversal of the albumin-globulin ratio and elevation of serum bilirubin level, predominantly direct. On bed rest her edema decreased and she became more comfortable. She was discharged on the 10th day. Her edema persisted, and when she was seen at the clinic from time to time her urine contained albumin and occasionally erythrocytes. On May 31, 1955, she suddenly became confused and unresponsive and was admitted to the hospital for the eighth time. Physical examination revealed peripheral edema, ascites, and dehydration. In spite of the judicious use of intravenously administered fluids and supportive therapy she failed to respond. She died within 24 hours of admission (see table).

Laboratory Findings

Tests	1949 4/24	5/3	6/18	8/15	1951 11/19	12/27	1952 2/8	3/19	6/23	8/5	1953 1/19	5/20	1954 3/9	3/22	4/24	11/13	1955 1/7
Cephalin flocculation	4+	...	...	4+	2+	4+	4+	3+	3+	3+	3+	3+	4+	3+	4+	4+	...
Thymol turbidity, units	...	...	...	...	6.0	6.0	9.0	7.0	...	8.5	6.0	5.5	12.0	5.5	10.0	8.0	...
Icteric index, units	91	62	143	123	33	19	16	...	11	...	...	...	...	16	...	...	...
Bilirubin, van den Bergh, mg. per 100 cc., direct/indirect *	...	...	...	...	...	...	...	...	†	...	...	0.2/ 1.8	0.5/ 2.0	0.6/ 1.6	...	5.3/ 3.1	...
Total protein level, gm. per 100 cc.	9.6	...	...	9.1	5.5	5.4	6.1	6.9	...	...	...	6.6	7.0	...	7.0	6.2	6.0
Albumin level, gm. per 100 cc.	4.9	...	...	3.3	1.9	1.4	2.3	2.8	...	...	...	3.8	3.1	...	3.4	2.1	2.0
Globulin level, gm. per 100 cc.	5.6	...	...	5.8	3.6	4.07	3.8	4.1	...	...	...	2.8	3.9	...	3.6	4.1	4.0
Blood cholesterol level, mg. per 100 cc.	200	...	...	100	156	...	...	...	208	168	120	226	334	219	230	105	...
Cholesterol esters, % of total	36.5	...	...	30.0	35.0	...	...	...	...	60.7	63.3	61.0	40.4	47.9	67.7	53.2	...
Alkaline phosphatase level, units per 100 cc.	...	...	...	...	4.7	...	...	...	...	...	...	11.7	9.6	9.0	...	18.2	...
Urine bile	4+	...	...	4+	1+	...	...	...	...	1+	1+	...	1+	...	...	...	2+
Urine urobilinogen, mg. per 100 cc.	0.7	...	...	0.9	...	...	...	...	...	...	0	...	...	...	...	...	...
Stool bile	0	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...
Stool urobilinogen	2+	...	...	1+	...	...	...	...	...	...	...	...	...	...	...	...	...

* Strong immediate direct and indirect reaction.
† Biphasic moderately delayed direct and indirect reaction.

ANATOMIC DIAGNOSIS

The body was that of a slightly icteric but relatively well-nourished and well-developed child of 12 years; 100 cc. of clear, straw-colored fluid was found in the peritoneal cavity. A few adhesions extended from the duodenum to the scarred bed of the previously removed gallbladder. The liver weighed 700 gm. (average normal 1,000 gm.) and presented both a nodular and finely granular surface. The cut surface was dark yellow-brown and lobulated. Glisson's capsule was greatly thickened.

The spleen was enlarged, weighing 850 gm. (average normal, 100 gm.). On cut section a moist purple surface was exposed. The heart was grossly normal. The lungs were diffusely congested. The lower third of the esophagus presented a few faintly visible varices. Microscopic sections of the liver revealed a thickened capsule from which connective tissue septums of variable width extended inward to form an irregular anastomosing network giving a pseudolobular pattern to the hepatic parenchyma. The lobules varied greatly in size. The broad connective tissue bands were characterized by proliferation of bile ducts and capillaries and the presence of either localized or diffuse aggregations of chronic inflammatory cells. Rare areas showed almost complete replacement of hepatic cells by a more dense fibroblastic connective tissue with similar or even more pronounced proliferation of bile duct epithelium. Most of the circumscribed islands of liver tissue revealed a widespread parenchymal degeneration as evidenced by vacuolization, cytoplasmic smudging, and loss of nuclear detail. The spleen presented a picture of intense congestion and subcapsular fibrosis. Varices were found in sections through the lower part of the esophagus. A widespread, pronounced congestion of the lungs was present.

COMMENT

Joseph D. Boggs, M.D., Chicago

This case well illustrates the prolonged course and eventually fatal termination of cirrhosis in childhood. The early phase of the disease in this child, the progression of changes seen in the liver biopsy specimens, and certain of the laboratory examinations are worthy of special note. From the beginning of the child's illness until the time of the first appearance of jaundice, 11 months elapsed. During this period the patient had bouts of abdominal pain, vomiting, and fever without any indication of clinical jaundice. Although the beginning of illness appeared to coincide with measles and chickenpox, prolonged vomiting productive of blood is exceedingly rare following either of these diseases, particularly when associated with abdominal pain. One is therefore led to the possibility of a long period of liver disease before the appearance of overt symptoms readily suggesting hepatic damage. The patient received hypodermic injections about 60 days before the development of jaundice. The possibility of a chance inoculation with hepatitis virus exists, for this incubation period is well within that for homologous serum hepatitis. Hepatitis without jaundice is well known. Stokes,[1] working with human volunteers; Denber [2]; Capps [3]; and others have reported such cases. If changes as seen in the first liver biopsy specimen here reported represent a viral hepatitis as reported by some, the early stage of this child's disease may represent a subacute case of hepatitis. Several writers have emphasized the prominence of abdominal pain and vomiting in conjunction with the anicteric form of hepatitis.[4] The liver should not be overlooked as the possible source of disease in the nonjaundiced child with prolonged abdominal pain or vomiting.

The liver biopsy specimens are of particular interest, in that they demonstrate a progression of liver changes. The first specimen in this case was taken 18 months after the onset of vomiting and abdominal pain and 10 months after onset of jaundice. In this specimen cirrhosis was not present, but instead the liver cells were described as swollen, granular, and multinucleated. These changes are not those seen in the early stages of the development of cirrhosis in adults but have frequently been reported in children. Gellis,[5] Craig,[6] Schwartz,[7] and others have described the formation of giant cells in infants and a hepatitis of viral origin has been suggested as a causative factor.[6] In a number of such patients reported by Gellis [5] and exhibiting identical liver changes early in the disease, cirrhosis developed later in childhood. It would appear that the early changes seen here represent a stage of rapid hepatic regeneration with amitotic division of the proliferating cells, producing so-called liver giant cells. Craig and Landing,[6] describing the changes seen in infantile as opposed to adult hepatitis, suggested a difference in blood supply and infantile liver resistance to necrosis as a possible explanation for the difference. Also to be considered is the inherently greater cellular capacity for regeneration in liver cells of children. The second liver biopsy specimen, following by nine months the first, presented different findings, the liver having developed a well-advanced cirrhosis. The liver at autopsy revealed a cirrhosis not appreciably far-progressed beyond that seen in the second biopsy specimen.

Laboratory findings at each hospital admission revealed abnormal thymol turbidity and cephalin cholesterol flocculation and increased 1 and 30 minute van den Bergh readings. Although acute infections may produce transitory changes in liver function, these changes are not as prolonged or as marked as those noted here. Hepatitis virus most frequently produces these changes. The consistently high total protein with an absolute increase of the globulin is noted to have developed in this patient before the development of cirrhosis. This change had occurred concomitant with the period of "giant cell" hepatitis. Although measurements are not given here of specific protein fractions, a rise of the gamma and beta globulin fractions in the serum of patients with hepatitis is generally recognized. Although much circumstantial evidence suggests that hepatitis virus exists in children such as this one, with later development of cirrhosis, all of the story has not been told. The possibility of viral infectious agents other than those producing infectious hepatitis or homologous serum hepatitis must be entertained. Hepatitis in children is not uncommon, nor is cirrhosis an oddity in the wards of a children's hospital. Little is known regarding the epidemiology or etiology.

From the Otho S. A. Sprague Memorial Laboratory, Children's Memorial Hospital.

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CORPORATE GIVING TO HOSPITALS

Added evidence of the disappearance of the soulless corporation is the rather liberal support given by many companies to nonprofit, tax-exempt hospitals. The facts that the gifts are deductible from the corporate earnings and that the company must justify the expenditure to the shareholders by showing that its employees benefit by having the hospital in the community do not alter this view. Because most companies now recognize a responsibility to the community in which they operate and support local hospitals with gifts of money, equipment, or services such as electric power, the National Better Business Bureau conducted a survey to determine (1) what criteria corporations use in deciding whether to support a given hospital and (2) how they decide how much to give.[1] Although the maintenance and operation of hospitals has become one of the country's 10 top industries, the nonprofit hospitals have never been completely self-supporting. In 1954 the average cost to these hospitals of patient care per patient per day was $22.78. The patients paid directly or through their insurance an average of only $21.07, leaving a deficit of $1.71 per patient per day. This deficit must be made up through gifts large and small, and much of it now comes from business organizations. The exact amount cannot be determined, because some corporate contributions to community funds include hospitals along with other charities and contributions to medical schools are applied in part to research and teaching hospitals. Many firms contribute to hospitals substantially but indirectly by paying a certain proportion of the hospital insurance carried by their employees.

According to the survey, 20% of the companies participating had no firm policy governing their giving but 56% based their giving on the extent to which the hospital was in a position to benefit their employees. Other useful criteria applied by some companies included (1) proof that the hospital needed funds to supplement their receipts; (2) proof that the hospital served the community as a whole without imposing racial, religious, or other restrictions on the patients; (3) proof of efficient operation with a view to eventually becoming self-supporting; and (4) proof of acceptance by the Joint Commission on Accreditation of Hospitals. Determination of the amount of their contribution was based on such factors as so much per employee, the number of bed-days of care furnished to employees in the preceding year, the total amount of individual contributions made by the employees, a percentage of the total amount of the drive, a percentage of the company's total allotment for philanthropies, recommendations of local management, and the size of the contributions made by other companies in the area coupled with relative size and importance of the company in the community. More often than not a combination of these considerations entered into the determination of the amount to be given. Some companies used a formula based on the number of their employees, the average size of family per employee, the population of the area served, and the amount the hospital sought to raise. Many participants believed however that a formula, if used, should not be too rigid but should rather serve as a guide.

The survey was strictly a fact-finding device and was not meant to establish any policies, but rather, by presenting various approaches to the two problems presented (whether to give and, if so, how much), to stimulate those in management to think of the problems in terms of their own special situation. Having done so, it is hoped that they will not only continue to give but to give wisely.

1. Corporate Contributions to Hospitals, New York, National Better Business Bureau, Inc., 1955.

EDUCATION OF PHYSICIANS FOR INDUSTRY

In early December, the National Fund for Medical Education with the co-sponsorship of the Council on Medical Education and Hospitals and the Council on Industrial Health of the American Medical Association, as well as the Association of American Medical Colleges, conducted a conference on the Education of Physicians for Industry at the Mellen Institute in Pittsburgh. Medical educators, occupational physicians, and industrialists engaged in three days of panel discussions and symposiums designed to evaluate the problems and growing needs in the important field of occupational medicine.

The education of physicians for industry was discussed from undergraduate, graduate, and postgraduate aspects. It was generally agreed that occupational medicine is that branch of medicine that deals with the relationships of man to his occupation for the purpose of the prevention of disease and injury and the promotion of optimal health, productivity, and social adjustment. Due recognition was given to the fact that American industry is the backbone of modern American civilization and is perhaps the greatest reason for our nation's preeminence in world affairs today. Obviously, our working force is industry's most valuable asset, and the health problems of all engaged in industry are of vital concern to continued national progress.

One of the important problems confronting medical educators and occupational physicians is the necessity of creating an awareness of, and interest in, this field among teachers and students in our medical schools. This does not appear to necessitate any radical revision of under-

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graduate curriculums, but it does involve the introduction into undergraduate clerkships of contact with qualified industrial physicians as members of the teaching staff. Physicians engaged in this field of medical care have a genuine challenge in effectively presenting the needs of occupational medicine so that interest and awareness is aroused in their professional colleagues as well as in medical students.

Graduate educational opportunities in the field of occupational medicine are increasing. A sound graduate educational program has been outlined, with standards and approval mechanisms as well as training facilities carefully described. Relatively recently an American Board of Occupational Medicine has been developed as one of the special certifying units of the American Board of Preventive Medicine; this should be a further stimulus to attract qualified physicians into this field. The need of special postgraduate opportunities for physicians in private practice who give part time to certain aspects of occupational medicine constitutes another area of challenge to medical education.

The National Fund for Medical Education and its co-sponsors are to be congratulated for developing this timely and important conference on the education of physicians for industry. The intercommunication that took place did much to clarify some areas of misunderstanding and to highlight areas of mutual concern to industry and to medicine. It is to be hoped that the proceedings of this useful conference will receive widespread distribution to industry as well as to the administrators and faculties of our medical schools. The field of occupational medicine represents a dual challenge meriting wholehearted support of medical educators and industrialists.

DILATATION OF ESOPHAGUS (MEGAESOPHAGUS)

Megaesophagus is a distinct disease entity characterized by dysphagia and abnormal dilatation of the organ. The terms cardiospasm, achalasia, and megaesophagus have been used interchangeably for many years. According to Effler and Rogers,[1] this is unfortunate and adds unnecessary confusion to an already confused state of affairs. They assert that the terms cardiospasm and achalasia imply lack of relaxation of the cardiac sphincter; in other words, the circular muscle of the terminal esophagus fails to relax in coordination with the act of swallowing and dysphagia ensues. In patients in whom functional cardiospasm occurs, even the most careful radiographic and endoscopic examinations rarely demonstrate an organic pathological condition. Indeed, the most important feature of functional cardiospasm, or achalasia, is that it is not followed by progressive dilatation of the esophagus. For that matter, neither is megaesophagus the end-product of mechanical obstruction.

Megaesophagus is a distinct organic disease entity associated with obvious structural change, quite different from achalasia or functional cardiospasm. This disease occurs at all ages. Patients with megaesophagus may present severe nutritional disturbances, with profound weight loss and the appearance of frank starvation. This does not occur in functional cardiospasm. Although the etiology of megaesophagus is unknown, Effler and Rogers maintain that the disease is featured by a pathological contraction of the circular muscle in the cardiac esophagus and by proximal dilatation of the organ. The diagnosis of megaesophagus is based on the clinical history and on radiography. Dysphagia secondary to the contraction of the hypertrophic inferior constrictor muscle and food retention are the major clinical features of the disease. Radiographic findings offer a conclusive diagnosis in most cases. On the other hand, with simple cardiospasm the esophagus may be quite normal in appearance, with some delay occurring as the barium enters the stomach. In megaesophagus, the organ clearly shows dilatation and impairment or absence of normal peristalsis.

Medical therapy and dilation offer symptomatic relief in most instances of cardiospasm or achalasia. Careful distinction, however, should be made between patients with functional cardiospasm and patients who have the characteristic organic changes of megaesophagus. Attempts to relieve the tonic contraction of the cardiac sphincter and megaesophagus by means of sympathomimetic drugs, sedatives, antispasmodics, or procaine derivatives have been singularly unsuccessful. A wide variety of dilation procedures have been recommended in the treatment of megaesophagus. In selected cases, where the esophagus is not tortuous, bouginage is sometimes successful; in other instances, patients who have had repeated dilations over a prolonged period of time display transient improvement only.

Effler and Rogers recommend surgery in patients with clinical evidence of true megaesophagus in whom there are no obvious contraindications to surgery. In general, surgical intervention to correct megaesophagus has utilized both the abdominal and the transthoracic routes. Although many operative modifications have been proposed, they differ primarily in detail and conform to one of three basic approaches: (1) esophagogastroplasty, (2) linear myotomy, and (3) subtotal resection and anastomosis of the esophagogastric cardia. In 1951, Wangensteen [2] described an extensive procedure in which the terminal esophagus as well as the upper stomach are resected, with a direct anastomosis between the esophagus and the gastric remnant. In the opinion of Effler and Rogers, treatment by linear esophagomyotomy offers prompt and lasting relief of symptoms. In a group of 32 patients treated surgically, 12 were treated by esophagocardioplasty, and all but 3 required a secondary operation. The 20 patients who were treated by transthoracic linear myotomy obtained complete relief from dysphagia and food retention.

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THE PRESIDENT'S PAGE

A MONTHLY MESSAGE

Many physicians have written to me and have asked why the American Medical Association is opposed to the physicians of the country being included in the Social Security program. About twice as many others have written and demanded that the A. M. A. never become a part of the Social Security "fiasco," as they call it. Between these two extremes there must be an answer to the whole problem. Let us see if we can find it. As I have traveled around the country, I have found a great deal of misinformation concerning the whole Social Security program. The men who want Social Security are the younger men, who are desirous of family protection in case they die. They are enthusiastic about the survivors' benefits. They claim that these benefits are much greater than any they can buy from the private insurance industry for the price they pay. These men are not interested in the retirement benefits that come to the man or woman at age 65, for they know they can, except in rare instances, earn more than $1,200 or $1,400 yearly long after they attain the eligible age. The older men and the younger men both are not interested in these latter benefits. Most men in both categories are amazed when I tell them that the House of Delegates of the American Medical Association has never been opposed to voluntary inclusion of physicians in the program.

Let us then look at some pertinent facts: First, Social Security was originally intended, back in the middle 1930's, to take care of the elderly worker when he was out of a job, so that the younger man could have work. It was a service that was to be supported by a tax on wages and a tax on management. Today, from an insurance angle, the tax premiums are not based on sound actuarial figures, because not one single individual who is drawing Social Security benefits has contributed or paid rates that from a strictly insurance point of view are sound actuarially. The insurance industry points out that at age 65 the life expectancy of an individual is 14 years. That means that $14,000 would have to be set aside from the premiums paid (taxes) to satisfy the demand. That also means that no one today drawing Social Security has paid in as premiums (taxes) as much as $1,000, yet they will draw an average total of $14,000 for the balance of their lives. To make it completely simple—the young man today is paying the tax premium to cover this inadequacy.

Let us look then for a moment at what has happened. Each succeeding Congress has amended the Social Security bill, adding more and more benefits, and the tax premium will be soon getting larger and larger. This is a deductible tax at the source. The last benefit added was the total disability freeze. Before the ink was dry on that one, and before anyone could find out what the effect would be on the tax premium, the House of Representatives before recess passed H. R. 7225, which reduces the age for women from 65 to 62 years, and added the provision for cash total disability payments to anyone age 50 or above. This bill passed the House without any public hearings and by a parliamentary procedure with limited floor debate. The bill is now in the Finance Committee of the Senate. We are obliged to oppose this bill because it definitely puts the physician in the middle of what could be a very dangerous situation. Carrying out the provisions of this amendment could place the whole Social Security financial program in jeopardy or up the premium taxes to such an extent that eventually the younger worker, compelled to contribute a larger and larger share of his wages, would rebel against the whole program. The American Medical Association is not opposed to Social Security. We are opposed to having the benefits increased by Congress at each session because we believe that (1) we will find we cannot afford it, (2) when dependency upon the federal government increases beyond a certain point we will automatically have the welfare state firmly established, and (3) a welfare state is state socialism, and state socialism is the first cousin of Soviet communism.

For the above reasons we are intensely interested in H. R. 7225. We will be obliged to join with many other groups and organizations that fear the destruction of free enterprise, and that believe that rich though we are we cannot afford this latter extravagance, to petition the Senate to stop, look, and listen before they pass this legislation. We would ask that this whole Social Security problem be removed from politics as such and that a thorough study of the whole problem be made by a commission appointed either by the Senate or by the President. If such a study is made, we, together with many of our friends in other walks of life, feel that the Social Security program can be made to work effectively, that it will more than accomplish the purpose for which it was originally intended, and that removed from politics it will serve a useful purpose. Is this too much to ask? Or is the need for votes so important that otherwise conservative and patriotic citizens who represent us in our legislative halls are willing to sell their own as well as our birthright for a mess of pottage?

ELMER HESS, M.D., Erie, Pa.

ORGANIZATION SECTION

WORLD MEDICAL ASSOCIATION MEETING IN VIENNA

Following is a brief abstract of the proceedings of the ninth general assembly of the World Medical Association. —Ed.

The Neues Rathaus in Vienna, Austria, was the site of the ninth general assembly of the World Medical Association from Sept. 20 to 26, 1955. Delegates and alternate delegates from 35 national medical associations were present. The sessions were also attended by representatives of 16 other international organizations and 10 national organizations and by 179 members of the United States Committee, Inc., of the World Medical Association. The ninth general assembly was the first international medical group to convene in Austria since this country was freed of occupying forces.

The assembly was convened by Prof. Dr. A. Spinelli of Italy, who in his presidential address pointed out that the World Medical Association has acquired world-wide prestige, esteem, and recognition. Each year the scope of activities and the enthusiasm and responsibility of the delegates increase.

Greetings and words of welcome were heard from Dr. Theodor Korner, President of the Federal Republic of Austria; Dr. Karl Niederberger, President of the Austrian Medical Association; His Honor, the Lord Mayor of Vienna; Mr. Karl Maisel, Minister of Social Affairs; and the President of the National Board of Trade.

The ninth general assembly elected Dr. Karl Niederberger, Austria, president for 1955-1956. Dr. Niederberger assumed the chair and delivered his inaugural address (*World Medical Journal*, vol. 2, no. 6, November, 1955), pointing out that the aim of the doctors of the world must be to serve suffering humanity. Prof. Dr. L. A. Hulst, Netherlands, on the request of the president and with the approval of the council, was elected presiding officer for the business sessions.

Amendments to Constitution and Bylaws

Following the return of delegates and the adoption of the standing orders, bylaw 19, paragraph ii of the constitution and bylaws, which provides the authorization for other delegations to represent member associations unable to attend, was adopted for the duration of the session.

Article 18 of the bylaws was amended to provide for the appointment of a presiding officer for the business sessions of the general assembly if the president so desires. Article 32 of the bylaws was amended to provide the appointment of a group to administer the affairs of the association in the event that financial or other emergency situations made it impossible for the council to be convened as a whole.

Applications for Membership

Membership in the association was granted to the following national medical associations:

Medical Confederation of Morocco
(Confédération des Syndicats Médicaux du Maroc)

Vatican Medical Association
(Associazione Medica Dello Vaticano)

Medical Federation of Venezuela
(Federación Médica Venezolana)

Report of the Council

Dr. Dag Knutson, Sweden, chairman of the council, presented the annual report of the council to the general assembly, which approved the following council resolutions. 1. Sincere appreciation was extended to each member association that had voluntarily increased its subscription rate to one swiss franc per member per year. 2. The council appointments and tentative program for the World Medical Association committee on occupational health services were approved. 3. The International Council of Nurses was granted permission to use the name of the World Medical Association on its health report form. 4. National medical associations in countries that have not yet ratified the 1949 Red Cross Geneva Convention were urged to recommend to their governments that this ratification be facilitated. 5. The association endorsed a resolution adopted by the International Society of Clinical Pathologists recommending that a licensed doctor of medicine be the effective head of all laboratories devoted to the diagnosis, treatment and prophylaxis of human disease. 6. The first sentence of the International Code of Medical Ethics as adopted by the assembly in 1949 was amended to read "A doctor must always maintain the highest standards of professional conduct toward both the individual and society." The assembly devoted considerable time to discussing new projects that might be undertaken. These included assistance to underdeveloped countries and national medical associations, visiting teams of experts, and regional meetings.

Reports of Secretaries

Asia.—Dr. S. C. Sen, India, secretary for Asia, reported that the government of India was in the process of implementing its medical benefit system under social security and that the shortage of well-qualified doctors to participate in the plan was creating critical problems in medical education, with the government considering the use of doctors from homeopathic and indigenous education systems for servicing its program.

Australasia.—In the absence of Dr. J. G. Hunter, secretary for Australasia, Dr. L. R. Mallen, Australia, presented a statistical report on the Australian national health service, which is under the direction of the Minister of Health who consults the medical profession at the planning level and accepts the recommendations of the profession in implementing the program.

Europe.—Dr. Paul Cibrie, France, secretary for Europe, informed the assembly that the most urgent problem in his area was the establishment of the proper relationship between the medical profession and the social security organizations. A regional meeting is planned for the purpose of comparing the status of the doctors in the systems now operating in the various countries. He reported that the results of the first world conference on medical education could be seen slowly affecting the medical schools in Europe and, finally, that the European doctor suffered economic hardship from a lack of understanding of the excessive costs connected with medical equipment and professional expense, which are not deductible under current income tax assessments.

Latin America.—Dr. Hector Rodriguez, Chile, secretary for Latin America, stressed the urgent need in his area for assistance in developing well organized efficient medical associations competent to assist in raising the standards of medical care and medical education.

Medical Education Committee

Sir Lionel Whitby, chairman of the medical education committee, reported that progress was being made on the plans for the second world conference on medical education scheduled in the United States in 1959. Studies of the proceedings of the first conference from member associations are beginning to be received and are proving helpful in planning the next conference. The topic "Postgraduate Medical Education" was recommended as the theme of the second world conference and approved by the assembly. The World Health Organization and the International Association of Universities will assist in sponsoring the program.

Miscellaneous Business Committee

Dr. Otto Rasmussen, Denmark, chairman of the miscellaneous business committee, presented a progress report on its investigation of establishing a central repository for medical credentials. Investigation is now in progress to establish legality of various forms of the original record and means of identification of the individual with his record. Continued study is also being made of promoting closer cooperation between the medical profession and the daily press.

International Liaison Committee

Dr. Jean Maystre, Switzerland, chairman of the international liaison committee, reported that meetings had been held between representatives of the World Medical Association; International Committee of the Red Cross; International Committee on Military Medicine and Pharmacy; and the World Health Organization for the purpose of discussing international medical law. The problem is an extensive one that will require investigation in various fields and must be studied comprehensively. In addition the committee was continuing its activity to find and establish legal recognition of an emblem for the protection of civilian doctors and medical care services during war time. Dr. P. Glorieux, Belgium, a member of the international liaison committee, pointed out that the medical profession must assume its responsibility not only in educating the people of the world relative to the provisions on the 1949 Geneva Convention but also in establishing the rights, duties, and responsibilities of the medical profession under this convention.

Planning and Finance Committee

Dr. Otto Leuch, Switzerland, treasurer and chairman of the planning and finance committee, presented the two reports together as they were interdependent. The financial reports for 1954 were accepted; the subscription rate for 1956 was set at 60 swiss centimes per member of a member association; the 1956 budget was adopted; and the subscription rates for ensuing years were set as follows: 1957—80 swiss centimes per member of member association, and 1958—1 swiss franc per member of member association. The subscription rate ceiling was abolished by the assembly and each member association was granted the option of paying its subscription rate above a definite proportion to be established by council either from its own treasury or from funds contributed by its supporting committee. Reports from the World Medical Association supporting committees in Australia, Canada, Sweden, and the United States of America were heard.

Social Security Committee

Dr. Dag Knutson, Sweden, chairman of the general assembly committee on social security, presented the committee report on the meeting of the committee with representatives of the International Social Security Association for the purpose of clarifying the meaning of the 15 conclusions on relations between social security institutions and the medical profession. The group had only completed consideration of about half of these conclusions; further meetings would be set and the results of the discussions made available to member associations as soon as feasible.

The topic of the social security discussion was a realistic approach to the economic and political aspects of social security. Dr. Knutson presented a paper entitled "Social Security in the Field of Health Care—Its Background and Prospects" (see THE JOURNAL Nov. 5, 1955, p. 1054).

Liaison Officers Reports

WHO, ILO, and ISSA.—Dr. Jean Maystre, Switzerland, liaison officer to the World Health Organization, the International Labour Organization, and the International Social Security Association, discussed activities of these organizations of interest to the medical profession. He noted particularly the program in occupational health programs under ILO, an expert committee on medical care in WHO, and the current interest of ISSA in the economic and technical problems of medical social security.

UNESCO and CIOMS.—Dr. Paul Cibrie, France, liaison officer to UNESCO and CIOMS, informed the assembly of developments in the programs of these two organizations. Of special interest to the medical profession is the intensified program under UNESCO in the field of research in cell growth and children's mental

health; CIOMS continues its program to assist all types of scientific and professional organizations to organize and co-ordinate conferences.

ICMMP.—Dr. P. Glorieux, Belgium, liaison officer to the International Committee on Military Medicine and Pharmacy, reported that this organization was recommending that the student doctors during their medical course be taught treatment of wounds caused by weapons —especially atomic weapons. In addition he recommended that the national medical associations immediately establish a program for the care of the civilian population in the event of war. Such a program would require cooperation with the government and military officials and a wide education of the civilian population. It is a program that must be fully established during peace time.

Member Association Resolutions

The ninth general assembly adopted the following resolutions submitted from member associations:

A medical education exchange program for well qualified young doctors (Ecuador);

Assistance in incorporating the Association's social security principles in the nations health legislation (Thailand);

Recommendation for the complete autonomy of medical organizations and their freedom from government interference (Cuba);

Reaffirmation of the 12 principles of social security of the World Medical Association (Cuba); and

Creation of local and national centers of the World Medical Association (Pakistan).

Unfinished Business

A progress report was received on the formation of a joint committee between the World Medical Association and the International Union of Medical Press for editing publications. The council was instructed to consider the advisability of increasing the registration fee at general assemblies for those who were not members of official delegations.

Scientific Session

Prof. Dr. J. Bock of Austria presided over the scientific session. The following papers were heard and discussed:

Viennese Medical Teaching of Interest in Foreign Countries
Prof. Dr. Leopold Schonbauer, director of the I University Surgical Clinic

Practical Problems in Rheumatology and Balneology
Prof. Dr. Karl Fellinger, director of the II University Medical Clinic

The Significance of Pathogenesis in Therapy
Prof. Dr. Ernst Lauda, director of the I University Medical Clinic

Medical Editors Conference

Prof. Dr. Karl Fellinger, Austria, executive editor of *Wiener Zeitschrift für innere Medizin* presided at the conference of medical editors. The luncheon for medical editors was sponsored by Mr. Milton Lasdon of the Nepera Chemical Company, Yonkers, N. Y. The papers heard and discussed were:

The Scientific Medical Press in Germany
Dr. med. Walter von Brunn, editor, *Deutsche medizinische Wochenschrift*

The Scientific Medical Press in Austria
Dr. Braunsteiner, editor, *Innere Medizin*

The Professional-Political Press in Germany
Dr. med. Ernst Fromm, editor, *Hamburger Arzteblatt*

The Professional Medical Press in Austria
Dr. E. Mazanek, executive editor, *Osterreichische Arztezeitung*

Medical Problems in the General Press in Germany
Mr. J. F. Volrad Deneke, representative of *the Central Press Agency of the German Medical Association*

Survey of the History of Medical Journalism in Austria
Dr. Gerhard Joseph, Cand. Phil.

Future Meetings

The assembly reaffirmed the selection of Havana, Cuba, as the venue of the 10th general assembly, Oct. 9-15, 1956. Turkey was selected as the venue of the 11th general assembly, September, 1957.

Election

President-Elect.—Dr. Augusto Fernandez Conde, Cuba, was unanimously elected president-elect for the year 1955-1956.

Council Vacancies.—The following persons were elected to council for the ensuing three years: Dr. L. A. Hulst (Netherlands); Dr. Dag Knutson (Sweden); Sir Lionel Whitby (Great Britain).

THE JOURNAL INDEX

The index to volume 159 of THE JOURNAL will appear in the issue for Jan. 14, 1956. Extra copies of the index will be available free of charge for those who wish to bind THE JOURNAL without mutilating the index number. Address requests to the Order Department, American Medical Association, 535 N. Dearborn St., Chicago 10, Ill.

HONORED BY SCHOOL HEALTH GROUP

Fred V. Hein, Ph.D., consultant on health and fitness in the A. M. A. Bureau of Health Education, was honored recently when he was named president-elect of the American School Health Association. Dr. Hein, who holds degrees in health and physical education, was elected at the association's meeting in Kansas City. During the past year, he has served as vice-president in charge of the convention program. Before joining the A. M. A. staff 10 years ago, Dr. Hein served as supervisor of health and physical education in Oshkosh, Wis., public schools.

PROCEEDINGS OF THE BOSTON CLINICAL MEETING

ABSTRACT OF PROCEEDINGS OF THE HOUSE OF DELEGATES OF THE AMERICAN MEDICAL ASSOCIATION AT THE CLINICAL MEETING IN BOSTON, NOV. 29-DEC. 2, 1955

(Continued from page 1663)

Report of Judicial Council

Dr. Homer L. Pearson, Chairman, presented the report of the Judicial Council (see THE JOURNAL, Oct. 29, 1955, pages 926-927), which was referred to the Reference Committee on Miscellaneous Business.

REPORT OF REFERENCE COMMITTEE ON MISCELLANEOUS BUSINESS

Dr. Frank H. Krusen, Chairman, Section on Physical Medicine, read the following report, which was adopted:

Report of the Judicial Council: Your reference committee considered the report of the Judicial Council and recommends the adoption of this report. Your committee desires to stress particularly the concept of the Council that "the principles of Medical Ethics are uniform in application and universal in their acceptance." Your committee desires to commend the Council's conclusion that state associations have the right to supervise the actions of their component societies and that if the right of appeal to the state association is granted it must be presumed that the state has the right to act on the appeal as its judgment dictates. The committee desires also to stress with the Council that matters of discipline are matters for local resolution.

Likewise, the committee desires to call to the attention of the House the conclusion of the Council that "the Principles of Medical Ethics of the Association proscribe as unethical all voluntarily associated activities with cultists."

Supplementary Report of Judicial Council

Dr. Homer L. Pearson, Chairman, presented the following supplementary report of the Judicial Council, which was referred to the Reference Committee on Miscellaneous Business.

Medical ethics are basically the same as ethics for any other homologous group of people working together in a common cause. They differ only in specialized particulars concerned with the service or activity which may be unique to a particular group and of little or no concern to another. Ethics are principles. They represent generations of experience by trial and error. As such, they are blueprints for the practices and behavior of the individuals who make up the group. They distill the best of the past, sustain the needs of the present, and point to the possibilities for improvement of the future. The Golden Rule is the solid core of all ethics.

Like the Golden Rule, the root principle of ethics cannot change. Interpretation and application inevitably vary to a greater or lesser degree from period to period in history. Variations come from special situations and changes of circumstance. Even when they occur after prolonged and careful consideration by adequate numbers representative of the group, they are dangerous. When forced by a powerful minority within or without a group or when selfishly motivated, variations may become extreme and basic principles distorted or forgotten altogether. In effect the old pattern is rendered completely unrecognizable, and a totally new one replaces it. All past experience is discarded, and the new plan is expected to bear its load without any certain foundations or supports. No wonder the work that results is often unsound and the structure erected collapses, destroying many innocents along with the foolish planners and builders. The only safe rule, apparently, is this: If a majority of the group agrees to change certain traditional interpretations and promulgate a new plan or rule of application in order to adapt to a real and permanent change in society or environment, it may and should very definitely do so, *provided* the alteration does not extend the structure dangerously beyond the supporting foundation of essential basic principles.

This is the age of ballyhoo. The so-called "allied commercial organizations" who make apparatus and the new "physik" have fallen under the spell and utter strange and often incomprehensible claims for their products. It's not surprising, then, that many physicians seriously question the wisdom of abiding by old-fashioned rules for the preservation of dignity and rigid honesty. These virtues wax and wane in popularity. Now they are at a rather low ebb throughout the world. We of the medical profession are told we should try to foster and certainly participate in a moral and religious rededication. If medicine wishes to provide its expected share in leadership at this important period in our history, we should be slow to change our present rules for individual conduct and behavior. Liberalization at this time may well be misinterpreted as capitulation. The advantages of more liberal interpretation on scores of thorny points are many, and they tempt us mightily. At times it seems we are engaged in a tough fight with one good arm tied behind us by our own foolish choice. We do have a most extraordinary birthright; however, if you look closely some of those immediate advantages which might be gained look a bit like pottage! Pottage may be very tempting to a hungry Esau, so let's be sure what we're trading for!

The Judicial Council views with some misgivings the trend in recent years to amend, to modify, to clarify, to reword, the Principles of Medical Ethics. These principles have been handed down to us through the years and are our birthright. Principles do not change; rules of conduct and laws may change, but principles do not. We pride ourselves in having such high ideals. The opening sentence of our principles of ethics reads: "The prime object of the medical profession is to render service to humanity; reward or financial gain is a subordinate consideration." That is a principle. It is not the desire of anyone to change it, but there are times when we wonder whether "reward or financial gain is a subordinate consideration." Birthrights are hard to come by, but their selling price is sometimes very cheap—sometimes the price is a meatless stew.

Recently this House by a large majority vote resolved to change our Principles of Medical Ethics so that it would not be unethical to own a drugstore or sell drugs and appliances "as long as there is no exploitation of the patient." Whether this is right or wrong is not for us to say. But the question arises: Where does profit end and exploitation begin? One of our principles reads: "The ethical physician, engaged in the practice of medicine, limits the sources of his income received from professional activities to services rendered the patient." Which is the undefiled heritage and which is the pottage?

There have been a number of resolutions introduced in this House concerning the division of fees. This Council was asked to determine how insurance payments could be made so that each man could get his pro-rated share. This we tried to do, but our principle is that the division of fees under any guise is unethical. Consider the matter of birthright. Consider the price of a meatless stew.

We hear a great deal these days about security. Every man must have a measure of security or he cannot survive. Let us be sure, then, just where our security lies—in the pot with the meatless stew or in a heritage undefiled. Does our security rest in the small advantages of these "extras" we have been considering or in a birthright of confidence? Does even financial advantage rest at last in the "extras" or in our heritage from honorable professional forebears? Can we deal lightly, can we afford to deal lightly, can we risk our credit to deal lightly with this bequest of confidence now reposed in us, not more as scientists than as men? Where is our security? "The prime object of the medical profession is to render service to humanity. . . ." Is this outmoded, empty phrasing or is it our birthright? "Re-

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ward or financial gain is a subordinate consideration." Is this "poppycock" or principle, a slogan or an integral part of our real security?

Invert these principles and what shall we gain—security or a mess of pottage? In the decisions of this House rests the case.

REPORT OF REFERENCE COMMITTEE ON MISCELLANEOUS BUSINESS

Dr. Frank H. Krusen, Chairman, Section on Physical Medicine, read the following report, which was adopted:

Supplementary Report of Judicial Council: Your reference committee studied with pleasure the beautifully worded supplementary report of the Judicial Council presented by its chairman, Dr. Homer L. Pearson, and it supports the viewpoints that "The prime object of the medical profession is to render service to humanity; reward or financial gain is a subordinate consideration"; and that "our principle is that the division of fees under any guise is unethical."

Your committee desires further to support Dr. Pearson's conclusion in discussion before the reference committee that "there are few instances in which it is necessary to change principles in a short period of time." The committee therefore favors a plan which would foster the procedure of requiring that all resolutions dealing with changes in the Principles of Medical Ethics shall be considered over a period between sessions of the House before final adoption. The Speaker of the House has given your committee the interpretation that a "session" is one concurrent group of meetings which may last one, two, three or more days. Thus, the House customarily holds two sessions each year; one an annual session and one an interim or clinical session.

Your committee recommends the adoption of the supplementary report of the Judicial Council.

Report of Council on Medical Education and Hospitals

Dr. H. G. Weiskotten, Chairman, presented the report of the Council on Medical Education and Hospitals (see THE JOURNAL, Oct. 29, 1955, pages 927-935), which was referred to the Reference Committee on Medical Education and Hospitals.

REPORT OF REFERENCE COMMITTEE ON MEDICAL EDUCATION AND HOSPITALS

Dr. George M. Fister, Chairman, Utah, submitted the following report, which was adopted:

Report of Council on Medical Education and Hospitals: In submitting its annual report, the Council on Medical Education and Hospitals has presented the various problems referred to it by the House of Delegates and the actions which it has taken in regard to them. The Council's report includes a historical background of the various actions taken by the House of Delegates relative to the internship since 1948, and presents the various steps the Council has taken prior to preparing its revision of the "Essentials of an Approved Internship." The Council presented a summary report to the House of Delegates which was published in THE JOURNAL of the American Medical Association on May 7, 1955, and subsequently included in the Handbook of the House of Delegates for the June, 1955, meeting in Atlantic City. In preparing the revision of the Essentials, the Council has taken full cognizance of the studies made by the Ad Hoc Committee on Internships of the House of Delegates and its recommendations, together with resolutions No. 51 and 55 adopted by the House of Delegates at Atlantic City concerning the educational standards of the internship and the nature of the internship. A complete statement summarizing the revision of the "Essentials of an Approved Internship," together with the full text of the revision is included in the present report of the Council as Appendix A.

Your reference committee understands that the Council also gave careful consideration to Resolution No. 82, submitted at the Atlantic City Meeting, in regard to the exclusion of obstetrics and gynecology from a straight internship. Your reference committee heard from the representatives of several obstetric and gynecologic groups requesting the reinstatement of straight internships in obstetrics and gynecology. After thorough review of the evidence presented, your reference committee concurs with the position of the Council that in the majority of instances the best preliminary preparation whether for specialty or general practice is a rotating internship. Your reference committee understands that in the past the Council has recognized straight internships in a number of the major clinical specialties as educationally sound, and therefore the Council has agreed to continue to recognize only a straight internship in medicine, surgery, pediatrics, and pathology. Your reference committee agrees with the Council's position relative to the continued approval of these internships.

Your reference committee has studied the revised "Essentials of an Approved Internship," as presented in Appendix A of the Council's report, including the proposal regarding straight internships, and recommends their adoption.

Your reference committee noted that the Council on Medical Education and Hospitals has indicated it is interested in Resolution No. 22 on general practice submitted to the House of Delegates at the Miami Meeting in 1954, and that in the current Educational Number of THE JOURNAL, issued on Oct. 8, 1955, it has included data concerning the activities of medical schools in this phase of medical education.

Further, your committee wishes to report that the Council on Medical Education and Hospitals has been cooperating with the Council on Medical Service in the studies being made in connection with Resolution No. 28 on the policy of medical practice by tax-supported medical schools, which was submitted to the House at its Miami session in December, 1954. It notes that the Council believes that important issues of this type are not solved by "ducking them," and that it is planning to devote a morning session of its next Annual Congress on Medical Education and Licensure on Feb. 13, 1956, to a symposium, cosponsored by the Council on Medical Service, to present facts and discussion in relation to problems of this area of concern to medical schools and to the profession. The members of the House of Delegates can expect a progress report in June, 1956.

In response to Resolution No. 14 on residency training in pediatrics, introduced at the Atlantic City Meeting in June, 1955, the Council is endeavoring to expedite the approval of residencies by the residency review committees as rapidly as is consistent with sound policy.

Your reference committee reports that the Council on Medical Education and Hospitals has prepared a statement on Resolution No. 45 on postgraduate medical education and pharmaceutical and drug houses, which was submitted to the House of Delegates at its June, 1955, meeting. This statement has recently been presented to the Board of Trustees for its consideration.

Your reference committee has reviewed the "Essentials of Approved Residencies and Fellowships," as presented in revision form in Appendix B of the Council's report and recommends their adoption.

Your reference committee has reviewed the "Essentials for Approved Examining Boards in the Medical Specialties," as presented in Appendix C and recommends their adoption.

Your reference committee has reviewed the "Essentials of an Acceptable School of Physical Therapy," as presented in Appendix D and recommends their adoption.

Your reference committee has reviewed the "Essentials of an Accredited School of X-Ray Technology," as presented in Appendix E and recommends their adoption.

Your reference committee recommends that in view of the possibility that there may be changes or readjustments in the names of some of the collaborating agencies cooperating in the preparation of the essentials that the Council's staff be given authority to make such editorial changes as may be necessary in keeping with the current status of these collaborating agencies.

Your reference committee has reviewed the activities of the numerous standing and special committees of the Council that have been assigned to specific topics and that have engaged individually or in collaboration with organizations concerned with certain areas of their activities. The reference committee has also noted the active participation of the Council on Medical Education and Hospitals with numerous other organizations and activities in areas closely related with or impinging on the area of medical education. Your reference committee wishes to com-

mend the individuals and organizations represented on these committees for their cooperation with and support of American medicine.

Your reference committee calls to your attention the activities of the Council on Medical Education and Hospitals in the conduct of surveys of medical schools in conjunction with the Association of American Medical Colleges, that the University of California at Los Angeles completed its four year organizational program and graduated its first class last June, and that next June the University of Miami will graduate its first class. We wish to call attention to the new medical schools under development at the University of Florida, Seton Hall, and Yeshiva University, and the transition of the two year schools at Mississippi, Missouri, and West Virginia into full four year medical schools.

Your committee wishes to report with interest the development of five additional residency review committees since the Council's last report to the House, including a residency review committee for general practice. There are now 16 of these committees functioning in the important area of evaluating training programs at the residency level. Your reference committee wishes to commend the committees for the work they are doing in cooperation with the Council in elevating the standards of training at the residency level.

Your reference committee desires that your attention be called to the establishment of the Internship Review Committee in 1954, which is now a permanent Council committee and which consists of members representing the American Academy of General Practice, the Association of American Medical Colleges, the Federation of State Medical Boards of the United States, the American Hospital Association, and the Council on Medical Education and Hospitals.

The National Intern Matching Program appears to be progressing satisfactorily and is functioning better each year.

Your reference committee calls your attention to the continued activities of members of the Council's field staff in cooperation with the Joint Commission on Accreditation of Hospitals. Pending completion of the special study of the Joint Commission's activities, as authorized by the House, your reference committee notes that the Council will continue to carry out its responsibilities with the Joint Commission on the basis of its present commitments.

The Council should be commended for its very comprehensive report. We realize that its length is necessary to acquaint members of the House of Delgates with its various and complex activities. Your reference committee recommends the adoption of the report of the Council on Medical Education and Hospitals in its entirety.

Report of Council on Medical Service

Dr. Joseph D. McCarthy, Chairman, presented the report of the Council on Medical Service (see THE JOURNAL, Oct. 29, 1955, pages 935-945), which was referred to the Reference Committee on Insurance and Medical Service.

REPORT OF REFERENCE COMMITTEE ON INSURANCE AND MEDICAL SERVICE

The report of the reference committee on the report of the Council on Medical Service will be found on page 1649 of the Dec. 24, 1955, issue of THE JOURNAL.

Supplementary Reports of Council on Medical Service

Dr. Joseph D. McCarthy, Chairman, presented the following supplementary reports of the Council on Medical Service, nos. 1 and 2, which were referred to the Reference Committee on Insurance and Medical Service:

1. RESOLUTION ON POLICY OF MEDICAL PRACTICE BY TAX-SUPPORTED MEDICAL SCHOOLS

During the December, 1954, session of the House of Delegates, Dr. J. P. Culpepper Jr., introduced for the Mississippi delegation a resolution on medical practice by medical schools. This resolution reads as follows:

WHEREAS, It is imperative that a climate of free enterprise and ethical, private professional practice prevail toward the end of providing all Americans with the best possible medical care; and

WHEREAS, Corporate, and tax-subsidized practice manifestly defeats these ends of service; and

WHEREAS, There patently exists a barrier to these ends in the device of a tax-supported medical school that is engaged in the practice of medicine in which fees are levied and collected under a policy allowing this practice to employed physicians; now therefore be it

Resolved, That the American Medical Association reaffirm its unalterable opposition to socialized and state subsidized medicine regardless of the form that it may assume; and be it further

Resolved, That the House of Delegates of the American Medical Association is of the opinion that these principles should be considered by constituent and component medical societies together with all other facts pertinent to the local situation in all controversies arising in the employment of the medical faculty by state (tax) supported medical schools and be fully considered in effecting action within the framework of this policy.

The reference committee report adopted by the House was:

Resolution No. 28 on Policy on Medical Practice by Tax-Supported Medical Schools: Your reference committee, while reaffirming the portion of the resolution regarding the unalterable opposition to socialized medicine on the part of the American Medical Association, recommends that this resolution be referred, without approval or disapproval at this time, to the Council on Medical Service, which is currently undertaking a thorough study of the various aspects of this subject.

As pointed out in the reference committee report, the Council on Medical Service through its Committee on Medical and Related Facilities, had been concerned with the general problems arising from medical practice by full-time clinical faculty members of medical schools. For some time prior to the introduction of the Mississippi resolution, this Committee had been reviewing these problems and had invited personal representatives from two areas to appear before the committee.

With the introduction of the Mississippi resolution, the Council had the choice of instructing the committee to consider the resolution itself and make recommendations relative to it, or to continue its review of the general problems concerned with medical practice by full-time clinical faculty members, including the resolution as a part of the study. With full recognition of the feeling of urgency on the part of some constituent associations, the Council requested the Committee on Medical and Related Facilities to continue its study, expand it to all facets of the problem, and make a progress report at this time. The following is a progress report on the work of this Committee submitted to the House of Delegates for its information. A complete report is planned for presentation to the June, 1956, session in Chicago.

Method of Operation.—In developing this project the Council first discussed ways and means of obtaining information with representatives of the Council on Medical Education and Hospitals and the Association of American Medical Colleges. As the result of this conference an Advisory Committee was selected, consisting of representation from these two groups, the Council on Medical Service, and the American Hospital Association. This Advisory Committee has met twice, in February and November, 1955, and is presently composed of Drs. H. B. Mulholland, Charlottesville, Va., Chairman; D. Henry Poer, Atlanta, Ga.; John B. Youmans, Nashville, Tenn.; Herman G. Weiskotten, Skaneateles, N. Y.; Victor Johnson, Rochester, Minn.; Vernon Lippard, New Haven, Conn.; Robert Moore, Pittsburgh; James M. Faulkner, Cambridge, Mass.; Edwin L. Crosby, Chicago; Sarah H. Hardwicke, Chicago; and Madison B. Brown, Philadelphia. Staff personnel are Drs. Dean Smiley and E. L. Turner, and Mr. George W. Cooley, Chicago. With the advice and assistance of this committee the staffs of the four groups met on four occasions and prepared a questionnaire to be sent to the medical schools by the Liaison Committee of the Council on Medical Education and Hospitals and the Association of American Medical Colleges.

As a second step a special questionnaire was mailed to state medical associations and county medical societies in areas where medical schools are located.

As of November 1, all but five of the 75 four-year schools, had replied. Replies also had been received on 30 schools from state medical associations and on 31 schools from county medical societies. The results of the medical school questionnaire were compiled and tabulated by the staffs and have been reviewed by the Committee on Medical and Related Facilities and the Advisory Committee. The results of the medical society questionnaire are being processed but will not be completed until more replies have been received.

In reviewing this material the Committee has tried to keep in mind the views of private medical practitioners as well as the problems and views of the medical school deans. However, it was evident that something more than a written questionnaire would be necessary to lay a firm groundwork for proper evaluation of the situation.

As a third step, then, the Committee decided to hear first hand from some of those close to this problem. Since the primary areas of present controversy seemed to be Colorado, Georgia, Mississippi, Oregon, and Washington, the Committee on Medical and Related Facilities invited representatives of these state medical associations and the deans of their state medical schools to meet with the committee in Chicago. Two of the five deans and representatives from four state associations were able to attend. The other three deans wrote indicating their desire to cooperate but stating they were unable to attend. Those attending were:

David S. Pankratz, M.D., Dean, University of Mississippi School of Medicine
Samuel P. Newman, M.D., Denver, President, Colorado State Medical Society
R. C. McGahee, M.D., Augusta, First Vice-President, Medical Association of Georgia
J. W. Chambers, M.D., LaGrange, Chairman, Council, Medical Association of Georgia
S. Lamar Bailey, M.D., Kosciusko, President, Mississippi State Medical Association
H. H. McClanahan, Jr., M.D., Columbus, Committee on Medical Education, Mississippi State Medical Association
A. O. Pitman, M.D., Hillsboro, President, Oregon State Medical Society
Russell L. Baker, M.D., Portland, Chairman, Study Committee of the University of Oregon Medical School and Affiliated Institutions
G. N. Aagaard, M.D., Dean, University of Washington School of Medicine
Cyrus W. Anderson, M.D., Denver, President, Denver Medical Society
Tom Goodwin, M.D., Augusta, Speaker, House of Delegates, Medical Association of Georgia
Steve Brown, M.D., Augusta, Member of Richmond County Medical Society
George E. Twente, M.D., Jackson, Secretary, Mississippi State Medical Association
Mr. R. B. Kennedy, Jackson, Executive Secretary, Mississippi State Medical Association
E. G. Chuinard, M.D., Portland, President-Elect, Oregon State Medical Society
Mr. Clyde C. Foley, Portland, Executive Secretary, Oregon State Medical Society and Multnomah County Medical Society

In separate sessions, the Committee heard from each group and interrogated them on their various problems and viewpoints.

The fourth step taken by the Committee was a request to the Law Department to undertake a review of the state statutes, rulings, and court decisions relating to medical school organization and operation. This is in process and will be reported to the committee at its next meeting.

A fifth step, worked out in cooperation with the Council on Medical Education and Hospitals, is to be a symposium on the program of the Annual Congress on Medical Education and Licensure in February. At that time representatives of this committee, the deans of medical schools, and private practitioners will present in open meeting the results of the study, the views and problems of the deans, and the views of private practice. Dr. George Klump, Williamsport, Pa., will be moderator, with Drs. Robert L. Novy, Detroit, and Willard A. Wright, Williston, N. D., presenting the results of the medical school and medical society questionnaires; Joseph Hinsey, Ph.D., Director, New York Hospital, Cornell Medical Center, discussing the problems as the medical school sees them; Dr. D. Henry Poer, Atlanta, Georgia, giving the medical practitioner's viewpoints; and Mr. Edwin Holman, American Medical Association Law Department, reviewing some of the legal problems, followed by discussion from the audience.

These, then, are the steps taken to date by the committee. It may be that others will be indicated and, if so, they will be undertaken. In view of the projected symposium in February and the need to await more replies of the medical societies, the committee does not wish to present any conclusions or make any recommendations at this time. It does, however, wish to review briefly some of the areas with which the Committee is concerned in this study. These are:

1. The legal and statutory limitations on medical schools relating to this problem.

2. The relationship between private practice privileges for full-time clinical faculty and the Principles of Medical Ethics.

3. The extent of and effectiveness of liaison between medical schools and the local medical profession.

4. The necessity for using private patients, with all of the doctor-patient relationship factors that exist in private practice, to maintain the diversity in clinical material necessary to adequate teaching and research programs.

5. The extent of the use of fees collected from the private patients of full-time clinical faculty members (*a*) to supplement salaries of the clinical faculty so as to attract competent physicians as teachers; (*b*) to stimulate research by the clinical faculty, the teaching fellows, and the resident physicians; (*c*) to supplement general medical school operating funds; (*d*) to supplement financing of hospital operations; (*e*) to meet or underwrite the expenses incurred by the medical school or hospital in providing facilities and services for such private patients; and (*f*) to what extent is there need for such use of private practice fees relative to *(a) (b) (c) (d)* and *(e)*.

6. The necessity for private practice privileges to serve private physicians throughout the state who request such special services or facilities as are available in the medical school or its hospital.

7. The necessity, because of such things as the expansion of voluntary health insurance and the requirements of welfare laws, to supplement the number of indigent (teaching) patients through the use of private patients.

8. The importance of maintaining a balance between private practice privileges, where such privileges are granted, and the need for clinical material, salary supplementation, etc., as well as the effectiveness of present methods used in maintaining such a balance, including (*a*) limitation to "patients referred by physicians"; (*b*) limitation as to "amount of income"; (*c*) limitation as to "time allowed"; and (*d*) limitation as to "number of patients."

9. The present use of such terms as "absolute full-time" and "geographic full-time" faculty and possible alternative titles.

Other areas may well come to the committee's attention as the medical society replies are reviewed. In addition the suggestions of individual physicians who have knowledge of or are concerned with this problem will be welcomed and given thorough consideration.

2. Resolution on Continuing Commission on Economic Policy

The Council on Medical Service has considered Resolution No. 54 (June, 1955), which was referred to it by the House of Delegates. The resolution proposed the establishment of a continuing Commission on Economic Policy. The Council has heard an able presentation by Dr. Lewis A. Alesen, California, concerning the intent of the resolution. While the Council is in sympathy with the philosophy expressed in Resolution No. 54, it is of the opinion that the Council does not have the authority or means, which includes budget, to activate a commission of such wide scope. With this in mind the Council recommends that this resolution be submitted to the Board of Trustees for further consideration and action.

REPORT OF REFERENCE COMMITTEE ON INSURANCE AND MEDICAL SERVICE

Dr. Lewis A. Alesen, Chairman, California, read the following report, the first portion of which, dealing with supplementary report 1 of the Council on Medical Service, was adopted.

On motion duly made, seconded, and carried, supplementary report 2 of the Council on Medical Service was substituted for the second portion of the report of the reference committee, and was adopted.

Supplementary Report of Council on Medical Service No. 1: This is a progress report by the Council on the subject matter of the resolution introduced by Dr. J. P. Culpepper Jr. at the December, 1954, session of the House of Delegates. Considerable discussion ensued. The introducer of the original resolution emphasized that the issue involved is the tax-subsidized practice of medicine which is essentially a form of socialized medicine and a practice which if allowed to continue will ulti-

mately result in complete socialization of the profession. The chairman of the Council, in explaining this supplementary report, emphasized the fact that this is a progress report and is not by any means a final recommendation. He further emphasized the fact that the Council on Medical Education and Hospitals and the Council on Medical Service have arranged a symposium on the program of the Annual Congress on Medical Education and Licensure to be held in Chicago in February, 1956, at which time the entire subject will be thoroughly explored by representatives of the Councils, the deans of medical schools, and private practitioners. The Council has experienced difficulty in receiving returns to its questionnaire sent to state and county medical associations on this subject. Your committee urges complete and prompt compliance.

Your committee commends the action of the Council in studying thoroughly each phase of this problem and recommends no action at this time.

Supplementary Report of the Council on Medical Service No. 2: This deals with Resolution No. 54 presented at the Atlantic City meeting in June, 1955, by the California delegation under the subject of "Continuing Commission on Economic Policy." The Council reports: "While the Council is in sympathy with the philosophy expressed in Resolution No. 54, it is of the opinion that the Council does not have the authority or means, which includes budget, to activate a commission of such wide scope. With this in mind the Council recommends that this resolution be submitted to the Board of Trustees for further consideration and action."

Because this resolution does not appear in the material in the hands of the delegates, it is quoted herewith:

WHEREAS, Governmental encroachment in the field of medical care is proceeding at a rapidly accelerating rate notwithstanding carefully conceived and well-executed measures to prevent such encroachment; and

WHEREAS, This continuous erosion of medical freedom will if unchecked seriously impair and ultimately degrade if not destroy the excellent medical care now available to the American people; and

WHEREAS, It may be trite and repetitious, but nonetheless most important, to emphasize constantly that medical freedom is just one of the component parts of our traditional freedom inseparably blended with religious freedom, academic freedom, economic freedom, and social freedom, to mention just a few of our God-given rights so highly prized by our founding fathers; and

WHEREAS, The effectiveness of the medical profession in protecting the health of the American people has been and is seriously weakened by the quaint, antediluvian and unrealistic ostrich-head-in-the-sand concept that medicine can continue to exist as an island of freedom in a sea of collectivism; now therefore be it

Resolved, That there is hereby created by the House of Delegates and answerable to it a continuing Commission on Economic Policy; and be it further

Resolved, That this commission shall consist of five members of the House appointed by the Speaker; the terms of the members of this commission shall ultimately be three years, arranged at the discretion of the Speaker in his original and subsequent appointments so that these terms shall be staggered; and be it further

Resolved, That the purpose and function of this Commission on Economic Policy shall be to make a thorough study of the relationship of the American physician to the economic milieu in which he lives and, with the aid and advice of the Director of the Bureau of Medical Economic Research, to formulate and present for the consideration of this House a constructive economic platform for the American Medical Association.

The following report of the Reference Committee on Hygiene, Public Health, and Industrial Health was adopted by the House in June:

Resolution No. 54 on Continuing Commission on Economic Policy.—Your reference committee feels that the attention of the Council on Medical Service should be drawn to this resolution since it has a commission devoted to the economics of medicine. Your committee feels that this is a well-drawn and exceptionally well-worded resolution and approves it in principle, but does not feel it is one for action by the House unless the Council on Medical Service so requests.

Your committee discussed the implications and ramifications of this proposal. The objective is to place the American Medical Association in a position of superior and unquestioned leadership in all phases of medical care by insisting that food, clothing, shelter, and every environmental factor to which our patients are subjected are of almost equal, if not entirely equal, importance with the more technical phases of diagnosis and treatment. Thus it becomes imperative that the doctor of medicine, individually and through his organizations, cultivate a thorough understanding of the economic process and take the initiative in suggesting constructive steps whereby there may be a constantly increasing amount and variety of goods and services available to every individual living within our economy at a price that individual can afford to pay and in an environment in which he is encouraged to produce to his utmost, to exchange the products of his brain and hands with his fellows, and to provide for independence of himself and his family in his later years. Your committee recommends that this resolution do pass.

Report of Council on Constitution and Bylaws

The report of the Council on Constitution and Bylaws (see THE JOURNAL, Oct. 29, 1955, pages 945-946) was referred by the Speaker to the Reference Committee on Amendments to the Constitution and Bylaws with the exception of the item on "Revision of Principles of Medical Ethics," which was referred to the Reference Committee on Miscellaneous Business.

REPORT OF REFERENCE COMMITTEE ON AMENDMENTS TO THE CONSTITUTION AND BYLAWS

Dr. Jay J. Crane, Chairman, Section on Urology, submitted the following report, which was adopted:

Your reference committee on Amendments to the Constitution and Bylaws wishes to compliment the members of the Council on Constitution and Bylaws. Drs. Louis A. Buie, Chairman, Warren W. Furey, Floyd S. Winslow, Stanley H. Osborn, B. E. Pickett Sr., Edwin S. Hamilton, Elmer Hess, George F. Lull, Ernest B. Howard, E. Vincent Askey, and Louis M. Orr, on the excellent work they have performed over the period of years giving the American Medical Association a workable and intelligent yardstick governing its diversified activities. Your committee especially wishes to praise Dr. Louis A. Buie for his tireless devotion and study while serving as a member of the Judicial Council as well as chairman of the Council on Constitution and Bylaws.

REPORT OF REFERENCE COMMITTEE ON MISCELLANEOUS BUSINESS

Dr. Frank H. Krusen, Chairman, Section on Physical Medicine, presented the following report, which was adopted:

Revision of the Principles of Medical Ethics: Your reference committee reviewed that section of the report of the Council on Constitution and Bylaws which deals with the revision of the Principles of Medical Ethics. Your reference Committee recommends that this portion of the report of the Council be adopted.

Supplementary Report of Council on Constitution and Bylaws

Dr. B. E. Pickett Sr., Acting Chairman, read the following supplementary report, sections 1 and 5 of which were referred to the Reference Committee on Miscellaneous Business, and sections 2, 3, 4, 6, and 7 to the Reference Committee on Amendments to the Constitution and Bylaws:

This supplementary report pertains to items which are not included in the annual report of the Council on Constitution and Bylaws.

1. The Board of Trustees submitted to the Council for consideration and possible implementation a resolution made by the Commission on Medical Care Plans "that the Constitution and Bylaws be amended to provide that amendment to the Principles of Medical Ethics proposed at a session of the House of Delegates shall be held over until the next session before final action is taken, and that during this period the Judicial Council shall consider such proposed amendments and report to the House of Delegates at the session at which final action is taken."

Neither the Principles of Medical Ethics nor the Constitution and Bylaws provide for amendment to the Principles, but changes approved by a majority vote of the House of Delegates have long been recognized as valid. The members of the Council believe that changes should be made in the Principles only after most careful consideration, but they recognize that the House

of Delegates should not be required to refer such changes to the Judicial Council only. The Council on Constitution and Bylaws therefore recommends that a new section be added, as a final section, to the Principles of Medical Ethics as follows:

These Principles may be amended on approval of two-thirds of the members of the House of Delegates present and voting, provided an amendment shall not be acted on until the session following that on which it is introduced.

It is the opinion of the members of the Council on Constitution and Bylaws that the interval between the sessions of the House of Delegates will provide ample opportunity for anyone, including the Judicial Council, to give appropriate consideration to the proposed amendment.

2. The attention of the Council has been called to the fact that whereas Chapter I, Section 1, of the Bylaws provides for the exemption of Associate Members from the payment of American Medical Association membership dues, such provision is not contained in Chapter III which is devoted to the subject of dues. It is therefore recommended that Chapter III be amended by adding to Section 4 a new paragraph (F), as follows:

(F) Associate members shall not be required to pay membership dues to the American Medical Association and shall not receive any publication of the American Medical Association except by subscription.

3. In June, 1955, the House of Delegates approved a report of the Reference Committee on Sections and Section Work which recommended that the name of the Section on Dermatology and Syphilology be changed to Section on Dermatology, and that the name of the Section on Physical Medicine and Rehabilitation be changed to Section on Physical Medicine. Therefore, the Council recommends that Chapter VII, Section 1(J) of the Bylaws be amended by deleting the words "and Syphilology," and that Chapter VII, Section 1(S) of the Bylaws be amended by deleting the words "and Rehabilitation."

4. At its meeting in June, 1955, the Council considered some matters referred to it by both the Board of Trustees and the Council on Scientific Assembly. These matters related to suggestions designed to clarify the provisions of the Bylaws governing the activities of the Scientific Assembly. Two of the suggestions were approved by this Council and subsequently by the Board of Trustees, and the following changes in the Bylaws are therefore recommended:

(A) Chapter VI, Section 1, of the Bylaws provides: "General meetings of the Scientific Assembly shall be arranged by the Board of Trustees. The general meetings shall be presided over by the President-Elect or in his absence or at his request by the Vice President or by a member of the Board of Trustees." Because of the fact that the Scientific Assembly, the Board of Trustees, and the House of Delegates all meet on the same day, it is becoming increasingly difficult for the President-Elect, Vice President or a member of the Board to preside at meetings of the Scientific Assembly. Therefore, the Council recommends that Chapter VI, Section 1, be amended by deleting the second sentence providing: "The general meetings shall be presided over by the President-Elect or in his absence or at his request by the Vice President or by a member of the Board of Trustees." and substituting therefor the sentence, "The Board of Trustees shall select the official who will preside at the general meetings of the Scientific Assembly." so that Chapter VI, Section 1, as amended will provide: "General meetings of the Scientific Assembly shall be arranged by the Board of Trustees. The Board of Trustees shall select the official who will preside at the general meetings of the Scientific Assembly."

(B) Chapter VII, Section 3, of the Bylaws provides: "The election of officers of the several sections, except the Section on Miscellaneous Topics, shall be the first order of business of the second meeting of the section at each Scientific Assembly. Only those may participate in an election who have indicated on registering the desire to affiliate with that section." Often, the second meeting of a section is a joint meeting with another section and confusion may result if an election of officers must be held at that time. Sections may make rules for the conduct of their proceedings and these rules may provide for an election of officers at some other time during the annual meeting if the first sentence of Chapter VII, Section 4 of the Bylaws were eliminated. Therefore, the Council recommends that Chapter VII, Section 4, be amended by deleting from lines 3 and 4 the words, "the first order of business of the second meeting of the section at each Scientific Assembly," and substituting therefor the words, "held during the annual meeting of the section," so that Chapter VII, Section 4, as amended will provide: "The election of officers of the several sections, except the Section on Miscellaneous Topics, shall be held during the annual meeting of the sections. Only those may participate in an election who have indicated on registering the desire to affiliate with that section."

5. In June of 1952, the House of Delegates assigned to the Council on Constitution and Bylaws the task of revising the Principles of Medical Ethics. The Council realized immediately the magnitude of the assignment, and recognized several factors which would delay its consummation. For example, a committee had been appointed by the Board of Trustees to study the osteopathic problem and later a committee was appointed by the Board to study the entire subject of ethical behavior of physicians. Obviously, the Council on Constitution and Bylaws could not complete its consideration of these subjects until the reports of these committees had become available. As you know, the reports of these committees were not made known until the last session of the House of Delegates in June of this year.

Another problem of obvious significance is the fact that, in all likelihood, there may be insufficient time during any session of the House to give appropriate consideration to a complete revision of the Principles. Therefore, the members of the Council decided to devote their attention to those principles which appeared to demand immediate consideration and to offer recommendations regarding them to the House of Delegates.

Accordingly, a Preamble was prepared which was approved by the House of Delegates in December, 1953, and during subsequent sessions of the House recommendations regarding revision of Sections 2, 4, 5, 6, 7 and 8 of Chapter I were approved.

The Council has now completed its study of the remainder of the Principles and is prepared to offer several recommendations. These proposals will require careful consideration by the members of the House of Delegates, and it is possible that sufficient time will not be available during this session to complete the task. The decision regarding this phase of the problem rests with the members of the House. Your attention is called to the fact that disagreement regarding any of the Council's proposals need not necessitate reconsideration of the entire revision.

In addition, the Council has devoted its attention to the following matters: (1) Several Principles appear to require revision, and recommendations regarding such revision have been prepared; (2) certain sections or portions of section have been found to be repetitious, and proposals regarding alteration or deletion have been prepared; (3) the members of the Council believe that Section 3 of Chapter VI is obsolete, and request that the members of the House consider the advisability of its deletion; (4) The sentiment expressed in some of the Principles which have not received attention appears to conflict with some of those which have been revised, and proposals have been prepared to correct these discrepancies; (5) An over-all editorial study has been made of the unrevised portion of the Principles, and proposals have been prepared which will correct wording without altering intent; (6) A study has been completed in which those principles which pertain to the domain of manners have been identified and the Council recommends that they be separated from the main body of the Principles of Medical Ethics. In order to accomplish this, it is proposed that the Principles be divided into two parts and that Part I be devoted to the Domain of Medical Ethics and that Part II be devoted to the Domain of Manners.

In their present form the Chapter headings are confusing and appear to serve no useful purpose. Therefore, it is recommended that they be abandoned and that a complete cross index be prepared which will provide for quick reference to subject matter and in general facilitate utilization of the Principles of Medical Ethics.

Following is the complete proposed revision of the Principles:

PROPOSED PRINCIPLES OF MEDICAL ETHICS AND PRECEPTS OF MANNERS

Preamble

These principles are intended to serve the physician as a guide to ethical conduct as he strives to accomplish his prime purpose of serving the common good and improving the health of mankind. They provide a sound basis for solution of many of the problems which arise in his relationship with patients, with other physicians, and with the public. They are not immutable laws to govern the physician, for the ethical practitioner needs no such laws; rather they are standards by which he may determine the propriety of his own conduct. Undoubtedly, interpretation of these principles by an appropriate authority will be required at times. As a rule, however, the physician who is capable, honest, decent, courteous, vigilant, and an observer of the Golden Rule, and who conducts his affairs in the light of his own conscientious interpretation of these principles, will find no difficulty in the discharge of his professional obligations.

Part One

THE DOMAIN OF MEDICAL ETHICS

Section 1.—The prime object of the medical profession is to render service to humanity; reward or financial gain is a subordinate consideration. Whoever chooses this profession assumes the obligation to conduct himself in accord with its ideals. A physician should be "an upright man, instructed in the art of healing." He must keep himself pure in character and be diligent and conscientious in caring for the sick. As was said by Hippocrates, "He should also be modest, sober, patient, prompt to do his whole duty without anxiety; pious without going so far as superstition, conducting himself with propriety in his profession and in all the actions of his life."

Section 2.—The avowed objective of the profession of medicine is the common good of mankind. Physicians faithful to the ancient tenets of this profession are ever cognizant of the fact that they are trustees of medical knowledge and skill and that they must dispense the benefits of their special attainments in medicine to all who need them. Physicians dedicate their lives to the alleviation of suffering, to the enhancement and prolongation of life, and to the destinies of humanity. They share whatever they have learned and whatever they may discover with their colleagues in every part of the globe. They recognize instinctively that the need for improvement of medical knowledge and skills is never at an end, and while they strive toward satisfaction of this need they are zealous in making available to physicians a good character who possess the desire and the ability to learn the aggregate of progress in medical education, research, and discoveries as they may exist at the time. They do not remain content to limit their activities to the care of the infirm, since they recognize also their useful rank among the vast concourse of citizens on whose shoulders the destiny of our nation rests. At the same time they will resist attempts to debase their services by diverting them to ignoble purposes. In their relationships with patients, with colleagues, and with the public, they maintain under God, as they have down the ages, the most inflexible standards of personal honor.

Section 3.—The ethical principles actuating and governing a group of clinic are exactly the same as those applicable to the individual. As a group or clinic is composed of individual physicians, each of whom, whether employer, employee or partner, is subject to the principles of ethics herein elaborated, the uniting into a business or professional organization does not relieve them either individually or as a group from the obligation they assume when entering the profession.

Section 4.—Solicitation of patients, directly or indirectly, by a physician, by groups of physicians or by institutions or organizations is unethical. This principle protects the public from the advertiser and salesman of medical care by establishing an easily discernible and generally recognized distinction between him and the ethical physician. Among unethical practices are included the not always obvious devices of furnishing or inspiring newspaper or magazine comments, concerning cases in which the physician or group or institution has been, or is, concerned. Self laudations defy the traditions and lower the moral standard of the medical profession; they are an infraction of good taste and are disapproved.

The most worthy and effective advertisement possible, even for a young physician, especially among his brother physicians, is the establishment of a well merited reputation for professional ability and fidelity. This cannot be forced, but must be the outcome of character and conduct. The publication or circulation of simple professional cards is approved in some localities but is disapproved in others. Disregard of local customs and offenses against recognized ideals are unethical.

Section 5.—Many people, literate and well educated, do not possess a special knowledge of medicine. Medical books and journals are not always easily accessible or readily understandable.

The medical profession considers it ethical for a physician to meet the request of a component or constituent medical society to write, act or speak for general readers or audiences. On the other hand, it may often happen that the representatives of popular news media are the first to perceive the adaptability of medical material for presentation to the public. In such a situation the physician may be asked to release to the public some information, exhibit, drawing or photograph. Refusal to release this material may be considered a refusal to perform a public service, yet compliance may bring the charge of self-seeking or solicitation.

An ethical physician may provide appropriate information regarding important medical and public health matters which have been discussed during open medical meetings or in technical papers which have been published, and he may reveal information regarding a patient's physical condition if the patient gives his permission, but he should seek the guidance of appropriate officials and designated spokesmen of component or constituent medical societies. Spokesmen should be empowered to give prompt and authoritative replies and a list should be issued which identifies them and discloses the manner in which they may be reached. These provisions are made with full knowledge that the primary responsibility of the physician is the welfare of his patient but proper observation of these ethical provisions by the physician concerned should protect him from any charge of self-aggrandizement.

Scientific articles written concerning hospitals, clinics or laboratories which portray clinical facts and techniques and which display appropriate illustrations may well have the commendable effect of inspiring public confidence in the procedure described. Articles should be prepared authoritatively and should utilize information supplied by the physician or physicians in charge with the sanction of appropriate associates.

When any sort of medical information is released to the public, the promise of radical cures or boasting of cures or of extraordinary skill or success is unethical.

An institution may use means, approved by the medical profession in its own locality, to inform the public of its address and the special class, if any, of patients accommodated.

Section 6.—The ethical physician, engaged in the practice of medicine, limits the sources of his income received from professional activities to services rendered the patient. Remuneration received for such services should be in the form and amount specifically announced to the patient at the time the service is rendered or in the form of a subsequent statement.

Unethical methods of inducement to refer patients are devices employed in a system of patronage and reward. They are practiced only by unethical physicians and often utilize deception and coercion. They may consist of the division of a fee collected by one physician ostensibly for services rendered by him and divided with the referring physician or physicians or of receiving the entire fee in alternate cases.

When patients are referred by one physician to another, it is unethical for either physician to offer or to receive any inducement other than the quality of professional services. Included among unethical inducements are split fees, rebates, "kickbacks," discounts, loans, favors, gifts, and emoluments with or without the knowledge of the patient. Fee splitting violates the patient's trust that his physician will not exploit his dependence upon him and invites physicians to place the desire for profit above the opportunity to render appropriate medical service.

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Billing procedures which tend to induce physicians to split fees are unethical. Combined billing by physicians may jeopardize the doctor-patient relationship by limiting the opportunity for understanding of the financial arrangement between the patient and each physician. It may provide opportunity for excessive fees and may interfere with free choice of consultants, which is contrary to the highest standards of medical care.

SECTION 7.—A physician may patent surgical instruments, appliances, and medicines or copyright publications, methods, and procedures. The use of such patents or copyrights or the receipt of remuneration from them which retards or inhibits research or restricts the benefits derivable therefrom is unethical.

SECTION 8.—It is not unethical for a physician to prescribe or supply drugs, remedies, or appliances as long as there is no exploitation of the patient.

SECTION 9.—The acceptance of rebates on prescriptions and appliances or of commissions from those who aid in the care of patients is unethical.

SECTION 10.—The prescription or dispensing by a physician of secret medicines or other secret remedial agents, of which he does not know the composition, or the manufacture or promotion of their use is unethical.

SECTION 11.—An ethical physician will observe the laws regulating the practice of medicine and will not assist others to evade such laws.

SECTION 12.—A physician should not base his practice on an exclusive dogma or a sectarian system, for "sects are implacable despots; to accept their thralldom is to take away all liberty from one's action and thought."* A sectarian or cultist as applied to medicine is one who alleges to follow or in his practice follows a dogma, tenet or principle based on the authority of its promulgator to the exclusion of demonstration and scientific experience. All voluntary professional relationships with cultists are unethical.

SECTION 13.—Patience and delicacy should characterize the physician. Confidence entrusted by patients to a physician and deficiencies in the disposition or character of patients observed during medical attendance should never be revealed unless their revelations is required by law. Sometimes, however, a physician must determine whether his duty to society requires him to reveal information, obtained through confidences entrusted to him as a physician, to protect the health and welfare of the community. In such instance, the physician should act as he would desire another to act toward one of his own family in like circumstances. Before he determines his course, the physician should know the law of his community concerning privileged communications.

SECTION 14.—The physician should neither exaggerate nor minimize the gravity of a patient's condition. He should assure himself that the patient, his relatives or his responsible friends have such knowledge of the patient's condition as will serve the best interests of the patient and the family.

SECTION 15.—A physician is free to choose whom he will serve. He should, however, respond to any request for his assistance in an emergency or whenever temperate public opinion expects the service. Once having undertaken a case, the physician should not neglect the patient, nor should he withdraw from the case without giving notice to the patient, his relatives or his responsible friends in time to allow them to secure the services of another physician.

SECTION 16.—A physician is expected to uphold the dignity and honor of his vocation. In order that a physician may best serve his patients, he is expected to exalt the standards of his profession and to extend its sphere of usefulness.

SECTION 17.—For the advancement of his profession, a physician should affiliate with medical societies and contribute of his time, energy and means so that these societies may represent the ideals of the profession.

SECTION 18.—A physician should aid in safeguarding the profession against admittance to it of those who are deficient in moral character or education. He should expose, without fear or favor, incompetence or unethical conduct on the part of members of his profession. Such problems should be considered before appropriate committees.

SECTION 19.—In a case of serious illness, especially in doubtful or difficult conditions, the physician should request consultations.

SECTION 20.—In every consultation, the benefit to the patient is of first importance. All physicians interested in the case should be candid with the patient, a member of his family or a responsible friend.

SECTION 21.—All physicians concerned in consultations should be punctual. When, however, one or more of the consultants are unavoidably delayed, the one who arrives first should wait for the others for a reasonable time, after which the consultation should be considered postponed. When the consultant has come from a distance, or when for any other reason it will be difficult to meet the physician in charge at another time, or if the case is urgent, or it be the desire of the patient, his family or his responsible friends, the consultant may examine the patient and mail his written opinion, or see that it is delivered under seal to the physician in charge. Under these conditions, the consultant's conduct must be especially tactful; he must remember that he is framing an opinion without the aid of the physician who has observed the course of the disease.

SECTION 22.—When a patient is sent to a consultant and the physician in charge of the case cannot accompany the patient, the physician in charge should provide the consultant with a history of the case, together with the physician's opinion and outline of the treatment, or so much of this as may be of service to the consultant. As soon as possible after the consultant has seen the patient he should address the physician in charge and advise him of the results of the consultant's investigation.

SECTION 23.—A physician, in his relationship with a patient who is under the care of another physician, should not give hints relative to the nature and treatment of the patient's disorder; nor should a physician do anything to diminish the trust reposed by the patient in his own physician. In embarrassing situations, or whenever there seems to be a possibility of misunderstanding with a colleague, a physician should seek a personal interview with his fellow.

SECTION 24.—Whenever there arises between physicians a grave difference of opinion, or of interest, which cannot be promptly adjusted, the dispute should be referred for arbitration, preferably to an official body of a component society.

SECTION 25.—Poverty of a patient, and the obligation of physicians to attend one another and the dependent members of the families of one another, should command the gratuitous services of a physician. Institutions and organizations for mutual benefit, or for accident, sickness and life insurance, or for analogous purposes, should meet such costs as are covered by the contract under which the service is rendered.

SECTION 26.—A physician should not dispose of his services under conditions that make it impossible to render adequate service to his patients, except under circumstances in which the patients concerned might be deprived of immediately necessary care.

SECTION 27.—Contract practice as applied to medicine means the practice of medicine under an agreement between a physician or a group of physicians, as principals or agents, and a corporation, organization, political subdivision or individual, whereby partial or full medical services are provided for a group or class of individuals on the basis of a fee schedule, or for a salary or for a fixed rate per capita.

Contract practice *per se* is not unethical. Contract practice is unethical if it permits of features or conditions that are declared unethical in these Principles of Medical Ethics or if the contract or any of its provisions causes deterioration of the quality of the medical services rendered.

SECTION 28.—Free choice of physician is defined as that degree of freedom in choosing a physician which can be exercised under usual conditions of employment between patients and physicians. The interjection of a third party who has a valid interest, or who intervenes between the physician and the patient does not *per se* cause a contract to be unethical. A third party has a valid interest when, by law or volition, the third party assumes legal responsibility and provides for the cost of medical care and indemnity for occupational disability.

* Nicon, father of Galen.

SECTION 29.—A physician should not dispose of his professional attainments or services to any hospital, lay body, organization, group or individual, by whatever name called, or however organized, under terms or conditions which permit exploitation of the services of the physician for the financial profit of the agency concerned. Such a procedure is beneath the dignity of professional practice and is harmful alike to the profession of medicine and the welfare of the people.

SECTION 30.—Physicians, as good citizens, possessed of special training, should advise concerning the health of the community wherein they dwell. They should bear their part in enforcing the laws of the community and in sustaining the institutions that advance the interests of humanity. They should cooperate especially with the proper authorities in the administration of sanitary laws and regulations.

SECTION 31.—Physicians, especially those engaged in public health work, should enlighten the public concerning quarantine regulations and measures for the prevention of epidemic and communicable diseases. At all times the physician should notify the constituted public health authorities of every case of communicable disease under his care, in accordance with the laws, rules, and regulations of the health authorities. When an epidemic prevails, a physician must continue his labors without regard to the risk to his own health.

Part Two

THE DOMAIN OF MANNERS

SECTION 1.—As a general rule, a physician should not attempt to treat members of his family or himself. Consequently, a physician should cheerfully and without recompense give his professional services to physicians or their dependents if they are in his vicinity. When a physician from a distance is called to advise another physician about his own illness or about that of one of his family dependents, and the physician to whom the service is rendered is in adequate financial circumstances, a compensation that will at least meet the traveling expenses of the visiting physician should be proffered him. When such a service entails a pecuniary loss to the visitor such loss may, in part at least, be provided for in the compensation offered.

SECTION 2.—When a physician or a member of his dependent family is seriously ill, he or his family should select a physician to take charge of the patient. The family may ask the physician in charge to consult other physicians.

SECTION 3.—After the physicians called in consultation have completed their investigations, they and the physician in charge should discuss the course to be followed. Statements should not be made nor should discussion take place in the presence of the patient, his family or his friends, unless all physicians concerned are present or have consented to the arrangement.

SECTION 4.—The physician in charge of the case is responsible for treatment of the patient. Consequently, he may prescribe for the patient at any time and is privileged to vary the treatment outlined and agreed on at a consultation whenever, in his opinion, such a change is warranted. However, after such a change, it is best to call another consultation; then the physician in charge should state his reasons for departing from the course decided at the previous conference. When an emergency occurs during the absence of the physician in charge, a consultant may assume authority until the arrival of the physician in charge, but his authority should not extend further without the consent of the physician in charge.

SECTION 5.—Should the physician in charge and a consultant be unable to agree in their view of a case, another consultant should be called or the differing consultant should withdraw. However, since the patient employed the consultant to obtain his opinion, he should be permitted to state it to the patient, his relative or his responsible friend, in the presence of the physician in charge.

SECTION 6.—When a physician has acted as consultant, he should not become the physician in charge except with the consent of the physician who was in charge at the time of the consultation or in response to the demands of the patient, his family or responsible friends.

SECTION 7.—When a physician makes social calls on another physician's patient he should avoid conversation about the patient's illness.

SECTION 8.—When a physician does succeed another physician in charge of a case, he should not disparage, by comment or insinuation, the one who preceded him. Such comment or insinuation tends to lower the confidence of the patient in the medical profession and so reacts against the patient, the profession and the critic.

SECTION 9.—When a physician is called in an emergency because the personal or family physician is not at hand, he should provide only for the patient's immediate need and should withdraw from the case on the arrival of the personal or family physician. However, he should first report to the personal or family physician the condition found and the treatment administered.

SECTION 10.—When several physicians have been summoned in a case of sudden illness or of accident, the first to arrive should be considered the physician in charge. However, as soon as is practicable, or on the arrival of the acknowledged personal or family physician, the first physician should withdraw. Should the patient, his family or his responsible friend wish some one other than he who has been in charge of the case, the patient or his representative should advise the personal or family physician of his desire. When, because of sudden illness or accident, a patient is taken to a hospital without the knowledge of the physician who is known to be the personal or family physician, the patient should be returned to the care of the personal or family physician as soon as is feasible.

SECTION 11.—When a physician is requested by a colleague to care for a patient during the colleague's temporary absence, or when, because of an emergency, a physician is asked to see a patient of a colleague, the physician should treat the patient in the same manner and with the same delicacy that he would wish used in similar circumstances if the patient were his responsibility. The patient should be returned to the care of the attending physician as soon as possible.

SECTION 12.—When a physician attends a woman who is in labor because the one who was engaged to attend her is absent, the physician summoned in the emergency should relinquish the patient to the first engaged, on his arrival. The one in attendance is entitled to compensation for the professional services he may have rendered.

SECTION 13.—Physicians should recognize and promote the practice of pharmacy as a profession and should encourage the cooperation of the pharmacist in education of the public concerning the practice of ethical and scientific medicine.

Part Three

MISCELLANEOUS

SECTION 1.—The House of Delegates may amend these Principles at any session on the approval of two-thirds of the members of the House of Delegates present and voting, provided the proposed amendment shall have been introduced at the preceding session.

6. Chapter XII, Sec. 4, of the Bylaws provides: "(G) Amendments to the Constitution and Bylaws to which shall be referred all proposed amendments to the Constitution or Bylaws;" The Council believes that matters relating to the Principles of Medical Ethics should also be referred to the Reference Committee on Amendments to the Constitution and Bylaws. It therefore recommends that Chapter XII, Sec. 4(G) be amended by deleting the semicolon after the word "Bylaws" and adding the words "and matters pertaining to the Principles of Medical Ethics of the American Medical Association."

7. The reference committees of the House of Delegates are provided for and enumerated in Chapter XII, Section 4 of the Bylaws. This enumeration is not in alphabetical order and the Council therefore recommends that Chapter XII, Section 4(A) through (M) be arranged in the following order:

(A) Amendments to the Constitution and Bylaws
(B) Board of Trustees and Secretary, Reports of
(C) Credentials
(D) Executive Session
(E) Hygiene, Public Health, and Industrial Health
(F) Insurance and Medical Service
(G) Legislation and Public Relations
(H) Medical Education and Hospitals
(I) Medical Military Affairs
(J) Miscellaneous Business
(K) Reports of Officers
(L) Rules and Order of Business
(M) Sections and Section Work

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REPORT OF REFERENCE COMMITTEE ON MISCELLANEOUS BUSINESS

Dr. Frank H. Krusen, Chairman, Section on Physical Medicine, submitted the following report, which was adopted:

Supplementary Report of Council on Constitution and Bylaws: Your reference committee in consultation with members of the Council on Constitution and Bylaws gave careful consideration to sections 1 and 5 of this supplementary report, and your reference committee recommends that these portions of the report be tabled for further consideration and action at the annual meeting of the House of Delegates to be held in Chicago in June, 1956.

Proposed Principles of Medical Ethics and Precepts of Manners of the American Medical Association: Your reference committee in consultation with members of the Council on Constitution and Bylaws and of the Judicial Council considered carefully the proposed Principles of Medical Ethics and Precepts of Manners of the American Medical Association. In discussion it became evident that there was need for wide distribution of these Principles and careful study of the proposed changes not only by this reference committee but also by all members of the House and in fact all members of the Association. It seemed desirable also that the two Councils, the Council on Constitution and Bylaws and the Judicial Council, should meet in joint session to consider these proposals. Your reference committee therefore recommends that these proposals be tabled for further consideration at the next annual session of the House to be held in Chicago in June, 1956. In the meantime, it is recommended that these proposals in their entirety be widely publicized and that consideration be given to publishing, in THE JOURNAL OF THE AMERICAN MEDICAL ASSOCIATION and also in state medical journals, these proposed changes in the Principles. It is also recommended that consideration be given to the mailing of copies to each member of the Association. Finally, your reference committee recommends that prior to the meeting in Chicago next June the Council on Constitution and Bylaws and the Judicial Council meet in joint session to consider these proposed changes.

REPORT OF REFERENCE COMMITTEE ON AMENDMENTS TO THE CONSTITUTION AND BYLAWS

Dr. Jay J. Crane, Chairman, Section on Urology, read the following report, which was adopted:

Your Reference Committee on Amendments to the Constitution and Bylaws has carefully reviewed assignments referred to it consisting of paragraphs 2, 3, 4A and B, 6, and 7 of the supplementary report of the Council on Constitution and Bylaws.

Paragraph 2 of the supplementary report proposes that a new paragraph (F) be added to Section 4, Chapter 3, of the Bylaws, which provides that Associate Members shall not be required to pay membership dues to the American Medical Association and shall not receive any publication of the American Medical Association except by subscription. Your reference committee recommends approval of this paragraph of the report.

The Council recommended in paragraph 3 that the name of the Section on Physical Medicine and Rehabilitation be changed to Section on Physical Medicine, and that the name of the Section on Dermatology and Syphilology be changed to Section on Dermatology. The Council recommends therefore that Chapter VII, Section 1 (J), of the Bylaws be amended by deleting the words "and Syphilology," and that Chapter VII, Section 1 (S), of the Bylaws be amended by deleting the words "and Rehabilitation." Your reference committee recommends approval of this paragraph of the report.

Paragraph 4 (A) of the Council's supplementary report related to suggestions designed to clarify the provisions of the Bylaws governing the activities of the Scientific Assembly. Two of these suggestions were approved by the Council on Constitution and Bylaws and the Board of Trustees. Chapter VI, Section 1, of the present Bylaws provides that the general meetings shall be presided over by the President-Elect or in his absence or at his request by the Vice President or by a member of the Board of Trustees. Because of the fact that the Scientific Assembly, the Board of Trustees, and the House of Delegates all meet on the same day it is becoming increasingly difficult for one of these officers to preside at these general meetings, it has been propsed and recommended by the Council that Chapter VI, Section 1, be amended so that the "general meetings of the Scientific Assembly shall be arranged by the Board of Trustees. The Board of Trustees shall select the official who will preside at the general meetings of the Scientific Assembly." Your reference committee recommends approval of this part of paragraph 4 of the report.

Paragraph 4 (B): Chapter VII, Section 4, of the present Bylaws provides: "The election of officers of the several sections, except the Section on Miscellaneous Topics, shall be the first order of business of the second meeting of the Section at each Scientific Assembly. Only those may participate in an election who have indicated on registering the desire to affiliate with that section." Often, the second meeting of a section is a joint meeting with another section and confusion may result if an election of officers must be held at that time. Sections may make rules for the conduct of their proceedings and these rules may provide for an election of officers at some other time during the annual meeting. If the first sentence of Chapter VII, Section 4, of the Bylaws were eliminated, the amended Bylaws will provide "The election of officers of the several sections, except the Section on Miscellaneous Topics, shall be held during the annual meeting of the Section." Your reference committee recommends approval of paragraph 4 (B) of the report.

Paragraph 6: Chapter XII, Section 4 (G), of the Bylaws reads, "Amendments to the Constitution and Bylaws to which shall be referred all proposed amendments to the Constitution or Bylaws." The Council believes that matters relating to the Principles of Medical Ethics should also be referred to the Reference Committee on Amendments to the Constitution and Bylaws and recommends that Chapter XII, Section 4 (G), be amended by deleting the semicolon after the word "Bylaws" and adding the words "and matters pertaining to the Principles of Medical Ethics of the American Medical Association." Your reference committee recommends approval of paragraph 6 of the Council's supplementary report.

Paragraph 7: The reference committees of the House of Delegates are provided for and enumerated in Chapter XII, Section 4, of the Bylaws. This enumeration is not in alphabetical order and the Council therefore recommends that Chapter XII, Section 4 (A) through (M) be rearranged in the following order:

(A) Amendments to the Constitution and Bylaws
(B) Board of Trustess and Secretary, Reports of
(C) Credentials
(D) Executive Session
(E) Hygiene, Public Health, and Industrial Health
(F) Insurance and Medical Service
(G) Legislation and Public Relations
(H) Medical Education and Hospitals
(I) Medical Military Affairs
(J) Miscellaneous Business
(K) Reports of Officers
(L) Rules and Order of Business
(M) Sections and Section Work

Your reference committee recommends approval of this portion of the Council's supplementary report.

Report of American Medical Education Foundation

Dr. Louis H. Bauer presented the report of the American Medical Education Foundation of which he is President, (see The Journal, Oct. 29, 1955, pages 946-947), which was referred to the Reference Committee on Medical Education and Hospitals.

Mr. Speaker and Members of the House: I am not going to read the report, but I would like to invite your attention to some items that I think should be stressed. There are several states that have given treasury gifts. We received one this morning from California, we received one last June from New Jersey, and we have also had treasury gifts from Oregon, Kansas, Virginia, Massachusetts, and Tennessee. I understand that Virginia, although it has made one gift this year, is going to make another. But what I think we fail to realize is that there are some state societies that have increased their dues, and the dues increase has been going to the support of the Foundation. I believe Illinois leads the parade. I think Illinois started that in 1952, and has been doing it every year since. Utah followed in 1954, and since then Nevada, California, and Idaho have followed suit.

I would not want to stand here and tell the state societies what they ought to do about increasing their dues for medical education, but I do think that every society ought to do its share, and I think it is hardly fair that the physicians of Illinois should contribute so large a share of the total amount. I think we owe a debt of gratitude to the Illinois State Medical Society and to those other state medical societies that are seeing that the physicians participate in this program, but I also think all of you should go back and see that your states do proportionately well. Whether you do it on a voluntary or a compulsory basis is your business, but let's see if we can do a little better than we have been doing in the past, because it is going to be tragic if we are unable to support our medical schools.

This spring there will be a Medical Education Week, and we are going to suggest to the state societies that they gear their campaigns so as to tie into this Medical Education Week. Sometimes it is easier to raise money in a short space of time than it is over a long period.

I also want to pay tribute to the Woman's Auxiliary. The Auxiliary raised about $80,000 this year, which might also put some of us to shame. It is also engaging in a campaign during Medical Education Week.

REPORT OF REFERENCE COMMITTEE ON MEDICAL EDUCATION AND HOSPITALS

Dr. George M. Fister, Chairman, Utah, presented the following report, which was adopted:

Your reference committee reviewed the report of the American Medical Education Foundation and was pleased at the spontaneous enthusiasm of various members of the Association who appeared before it recommending that the Association raise its dues designating that increase to the Foundation. Your reference committee wishes to commend the Foundation for its activities to date and because of the stimulation which developed in the hearing, your committee wishes to recommend that the Board of Trustees give consideration to a dues increase for its members for this and other purposes.

Report of Committee on Blood

Dr. Leonard W. Larson, Chairman, submitted the following report, which was referred to the Reference Committee on Miscellaneous Business:

The Committee on Blood has not met since the last meeting of the House of Delegates. You will recall that in the Committee's report to this House last June, it was announced that the Blood Foundation had been incorporated. Your attention is directed to the report of the Committee on Blood which was published in THE JOURNAL OF THE AMERICAN MEDICAL ASSOCIATION, Aug. 6, 1955, in which the history of the Committee was briefly reviewed, the principles relative to blood banking as adopted by this House were stated, the Red Cross Blood Program was reviewed, and reference was made to the establishment and bylaws of the Blood Foundation.

The name of the Blood Foundation has been changed to "Joint Blood Council, Inc." Dr. Frank Wilson, formerly director of the American Medical Association's Washington Office, has been employed as Executive Vice President of the Council, and the headquarter's office has been established in Washington, D. C.

It is the sincere hope of the members of the Committee on Blood that the purpose for which the Joint Blood Council was organized will be fulfilled. The Council will succeed if those who are concerned with blood banking in the United States will give it their whole hearted cooperation.

The purpose of the Joint Blood Council is as follows:

To develop ways and means to make blood and its derivatives available to all persons in the United States; to stimulate and advise on areas of research in the collection, preservation, and use of blood and its derivatives; to collect, study and disseminate information on blood and blood derivatives; to establish minimal standards for voluntary accreditation of blood banks and to establish a means of inspection for accreditation; to coordinate existing systems and encourage and institute plans where necessary for the exchange of blood or blood credits between accredited banks on a state, regional and national basis; to encourage the public through appropriate means to donate blood for civilian and defense requirements and to assist in the establishment of uniform national publicity policies; to disseminate annually a list of blood banks accredited by this organization; to serve, on invitation, as a fact-finding and arbitration body in disputes arising from the collection and use of blood and its derivatives; to serve, on invitation, as an advisory group to federal and military agencies having to deal with blood and its derivatives.

REPORT OF REFERENCE COMMITTEE ON MISCELLANEOUS BUSINESS

Dr. Frank H. Krusen, Chairman, Section on Physical Medicine, read the following report, which was adopted:

Report of the Committee on Blood: Your reference committee has studied the report of the Committee on Blood and notes with approval the establishment of the Joint Blood Council, Inc., and the continued interest of our Committee on Blood in this entire program. Your reference committee recommends that this report be adopted.

Report of the Committee on Medical Practices

The Speaker called the attention of the House to the fact that action on the report of the Board of Trustees on the Report of the Committee on Medical Practices had been held over from the June, 1955, meeting (see THE JOURNAL, July 2, 1955, page 735) so that the members of the House might have opportunity to study the full report of the Committee. The Speaker declared that the report is hereby entered into the House, and referred it to the Reference Committee on Insurance and Medical Service.

REPORT OF REFERENCE COMMITTEE ON INSURANCE AND MEDICAL SERVICE

The report of the reference committee on the report of the Committee on Medical Practices will be found following supplementary report F of the Board of Trustees on page 1652 of the Dec. 24, 1955, issue of THE JOURNAL.

Introduction of Resolutions

The Speaker called for the introduction of resolutions as numbered.

No. 1. Resolution on Woman's Auxiliary Support of American Medical Education Foundation

Dr. James M. Kolb, for the Arkansas delegation, introduced the following resolution, which was referred to the Reference Committee on Miscellaneous Business:

WHEREAS, The American Medical Association established in 1950 the American Medical Education Foundation "to provide an instrument through which individual physicians, state and county medical societies, and other professional organizations can make contributions in support of medical education"; and

WHEREAS, The Woman's Auxiliary to the American Medical Association has made contributions to this Foundation annually since 1951, showing an increasing interest in its success; therefore be it

Resolved, That the House of Delegates of the American Medical Association requests the Woman's Auxiliary to continue its efforts in raising funds for medical education by urging each of its constituent auxiliaries to participate actively in financial support of the American Medical Education Foundation.

REPORT OF REFERENCE COMMITTEE ON MISCELLANEOUS BUSINESS

Dr. Frank H. Krusen, Chairman, Section on Physical Medicine, presented the following report, which was adopted unanimously.

Resolution No. 1 on Woman's Auxiliary Support of A. M. E. F.: Your reference committee fully supports this resolution that the House request the Woman's Auxiliary to continue efforts to raise funds for medical education by urging each of its constituent auxiliaries to participate actively in financial support of the American Medical Education Foundation. In doing so your reference committee wishes especially to recommend that the House extend to the Woman's Auxiliary an expression of its sincere appreciation of the magnificent contributions already made by the Woman's Auxiliary in support of medical education. Your reference committee recommends that this resolution be adopted.

No. 2. Resolutions on Distribution of Salk Poliomyelitis Vaccine

Dr. Milford O. Rouse, for the Texas delegation, presented the following resolutions, which were referred to the Reference Committee on Hygiene, Public Health, and Industrial Health:

WHEREAS, Dr. Jonas Salk has accomplished for the National Foundation for Infantile Paralysis one of its major purposes, namely, the development to a commercial state of an apparently effective vaccine against poliomyelitis; and

WHEREAS, Further research by him and other investigators gives promise of improvement of poliomyelitis immunization with consequent continued need of supporting funds; and

WHEREAS, The National Foundation for Infantile Paralysis stated its intention to be out of the business of purchasing and supplying poliomyelitis vaccine by Oct. 1, 1955; now therefore be it

Resolved, That we, the members of the American Medical Association, do heartily approve the publicly expressed policy of the National Foundation for Infantile Paralysis to return to, and maintain, its original policy of devoting its funds to proper research and to assistance in the actual care of patients disabled by poliomyelitis; and be it further

Resolved, That the House of Delegates of the American Medical Association go on record as recommending that the further purchase and distribution of Salk vaccine be carried on by the presently available commercial avenues used for other immunizing agents.

REPORT OF REFERENCE COMMITTEE ON HYGIENE, PUBLIC HEALTH, AND INDUSTRIAL HEALTH

Dr. L. Howard Schriver, Chairman, Ohio, read the following report, which was adopted:

Resolution No. 2 on Distribution of Salk Poliomyelitis Vaccine and Resolution No. 13 on Distribution of Salk Vaccine: Your committee considered Resolutions No. 2 and No. 13 jointly as they both contained parallel subject matter. These resolutions were provocative of much discussion contributed by many persons. After prolonged consideration your committee wishes to present a substitute resolution consisting of Resolution No. 2 with the addition of the following final paragraph: "and be it further *Resolved*, That all vaccines, once proven, should enter the usual channels of distribution."

No. 3. Resolutions on Amendment of Constitution of United States Regarding Electoral College

Dr. Milford O. Rouse, on behalf of the Texas delegation, introduced the following resolutions, which were referred to the Reference Committee on Legislation and Public Relations:

PREAMBLE

In the election of the President of the United States the form of representation of the states has long been violently distorted by use of the general ticket in each state's election of its presidential electors—election of party slates, en bloc, by simple statewide pluralities. This distortion of the form of representation has put a high premium on small pluralities in large pivotal states where organized pressure groups all too often hold the balance of political power in presidential elections, giving these groups an influence on the election of a President which they do not have in the election or the Congress. The presidential electors were designed to be counterparts in number of each state's representation in the Congress in order to give each state the same voice in the election of a President that it has in Congress. In view of these considerations, now therefore be it

Resolved, That the Constitution of the United States be amended to provide for the choosing of presidential electors in the same manner in which members of the Congress are elected; and be it further

Resolved, That copies of this resolution be sent to the members of the Congress of the United States and to the members of the legislatures of the several states.

REPORT OF REFERENCE COMMITTEE ON LEGISLATION AND PUBLIC RELATIONS

Dr. Paul A. Davis, Chairman, Ohio, read the following report, which was adopted:

Resolution No. 3 on Amendment to Constitution of the United States Regarding Electoral College: Your committee, while in sympathy with the purpose of this resolution, feels, after careful consideration, that this is a matter for individual decision by each citizen. It therefore commends thorough study of the proposal to physicians as citizens. Your committee recommends, therefore, that no other action on the resolution be taken at this time.

No. 4. Resolution on Doctor-Draft Law

Dr. Milford O. Rouse, for the Texas delegation, submitted the following resolution, which was referred to the Reference Committee on Medical Military Affairs:

WHEREAS, In spite of the feeling of the medical profession that no further drafting of physicians as a class into the military services was justifiable on the basis of exigency, the President and Congress did extend this legislation for two years; and

WHEREAS, Such legislation is strictly class legislation and therefore discriminatory and unconstitutional; now therefore be it

Resolved, That the Board of Trustees of the American Medical Association be requested and empowered to prepare and financially support a test case of the present Doctor-Draft Law through the federal courts to and including the Supreme Court of the United States for the purpose of securing a direct, final, and clear judicial opinion in the constitutionality of the said Doctor-Draft Law.

REPORT OF REFERENCE COMMITTEE ON MEDICAL MILITARY AFFAIRS

Dr. Charles H. Richardson Sr., Chairman, Georgia, read the following report, which was adopted:

Your committee would now like to report on Resolution No. 4 proposed by the Texas Delegation. In essence, this resolution proposes an American Medical Association-sponsored test of the legality of the Doctor-Draft Law. By way of introduction it is to be stated that since the passage of this special draft act in September, 1950, with subsequent extensions, it has plagued the medical profession. It is openly conceded that this is discriminatory legislation and disliked by legislators, government administrators, and physicians in and out of uniform. Your committee is reminded that this law was extended on June 30, 1955, for two additional years and will continue in force until July 1, 1957.

To support Resolution No. 4 would present innumerable and complex legal and administrative problems for the American Medical Association. Legal advice is to the effect that the Association cannot be the plaintiff but that a civilian physician would have to be drafted as a private into the Armed Forces under the current Doctor-Draft Act who would be willing to become the plaintiff. Furthermore, to process such a case through the courts would be most time-consuming and expensive.

Your committee is of the opinion that such a test case has been tried and a decision rendered. Reference is made to the test case *Bertelsen* v. *Cooney*, which was heard in a federal district court of the fifth circuit. The court ruled that the constitutional war powers are plenary and that Congress has unlimited power to conscript on its own terms without review by the courts. On appeal before the Fifth Circuit Court of Appeals the decision was affirmed. The court stated, "whether the legislation is wise or unwise, fair or unfair, necessary or unnecessary, is for legislative not judicial determination. Congress has the power to raise and support armies. It is not for the judiciary to review how the forces shall be raised nor of what elements they shall be composed. It is for Congress to say where, who and to what extent, and how they shall be selected." The United States Supreme Court, upon appeal, refused to accept jurisdiction, in legal effect sustaining the opinion of the lower court.

Your committee believes that the most constructive action to be taken would be strong support of the career incentive program for medical officers and that no useful purpose would be served by further testing the legality of the Doctor-Draft Act. Your committee, therefore, recommends that this resolution be not adopted.

No. 5. Resolutions on Sears Roebuck Foundation Plan for Medical Practice Units

Dr. Milford O. Rouse, for the Texas delegation, introduced the following resolutions, which were referred to the Reference Committee on Miscellaneous Business:

Whereas, The Sears Roebuck Foundation in cooperation with the American Medical Association has established a new plan to assist in establishing medical practice units in areas where additional medical care is needed and for physicians who are unable to secure bankable commercial loans elsewhere; and

WHEREAS, The medical profession for many years has directed much research and planning aimed at providing the best possible distribution of medical facilities throughout the United States; and

WHEREAS, One of the obstacles encountered in the establishment of practices in small cities and towns or rural areas has often been the physician's inability to finance the increasing expense of his office and equipment; and

WHEREAS, The Sears Roebuck Foundation in providing an interest-free loan fund properly administered provides one avenue to meet this problem of financing; and

WHEREAS, The Sears Roebuck Foundation has sought and received the assistance of medical leadership in designating areas of need in determining proper loans; and

WHEREAS, The House of Delegates of the American Medical Association desires to commend Sears Roebuck on the splendid cooperation offered the medical profession through the planning and establishment of this Foundation and this special project; and

WHEREAS, It is the belief that the example set by Sears Roebuck Foundation is a worthwhile pattern which other business and industrial leaders may follow in assisting in an over-all effort to provide the best medical care in the world to the entire population of our nation; now therefore be it

Resolved, That the House of Delegates of the American Medical Association go on record as commending this fine business organization for thoughtfulness and foresight in creating and sponsoring this worthwhile project; and be it further

Resolved, That copies of this resolution be sent to the proper officials of Sears Roebuck and the Sears Roebuck Foundation.

REPORT OF REFERENCE COMMITTEE ON MISCELLANEOUS BUSINESS

Dr. Frank H. Krusen, Chairman, Section on Physical Medicine, read the following report, which was adopted:

Resolution No. 5 on the Sears Roebuck Foundation Plan for Medical Practice Units: Your reference committee concurs in this resolution that the House of Delegates of the American Medical Association go on record as commending this fine business organization for thoughtfulness and foresight in sponsoring this worthwhile project and that copies of this resolution be sent to proper officials of the Sears Roebuck Company and the Sears Roebuck Foundation. All of the testimony before the reference committee commended in glowing terms this fine project. Your reference committee recommends that this resolution be adopted.

No. 6. Resolution on Changing Name of Section on Preventive and Industrial Medicine and Public Health

Dr. Rutherford T. Johnstone, Section on Preventive and Industrial Medicine and Public Health, introduced on behalf of the section, the following resolution, which was referred to the Reference Committee on Sections and Section Work:

WHEREAS, The name of the Section on Preventive and Industrial Medicine and Public Health is long and unwieldy; and

WHEREAS, The specialty of preventive medicine is now recognized to include the disciplines of public health, aviation medicine, and occupational medicine; and

WHEREAS, The specialty board of preventive medicine approved by the Council on Medical Education and Hospitals now certifies and recognizes specialists in these three fields; and

WHEREAS, The prevention of disease is the fundamental and essential philosophy of these groups; now therefore be it

Resolved, That the Section on Preventive and Industrial Medicine and Public Health respectfully request that the House of Delegates of the American Medical Association change the name of the Section on Preventive and Industrial Medicine and Public Health to Section on Preventive Medicine.

REPORT OF REFERENCE COMMITTEE ON SECTIONS AND SECTION WORK

Dr. Gilson Colby Engel, Chairman, Pennsylvania, submitted the following report, which was adopted:

Resolution No. 6: The "Resolved" states as follows: "That the Section on Preventive and Industrial Medicine and Public Health respectfully request that the House of Delegates of the American Medical Association change the name of the Section on Preventive and Industrial Medicine and Public Health to Section on Preventive Medicine." Dr. Johnstone appeared before your reference committee and assured it that all groups were in accord on this change and stated the factual reasons for recommending this change. Your reference committee recommends to the House of Delegates changing of the name of the Section on Preventive and Industrial Medicine and Public Health to Section on Preventive Medicine.

No. 7. Resolution on Amendment of Principles of Medical Ethics, Chapter IV, Section 1

Dr. Lawrence R. Dame, Massachusetts, for Dr. Earle M. Chapman, Massachusetts, presented the following resolution, which was referred to the Reference Committee on Miscellaneous Business:

WHEREAS, Some physicians have abused the Principles of Medical Ethics by claiming insurance money for the care of their own families; and

WHEREAS, Chapter IV, Section 1, of the Principles of Medical Ethics of the American Medical Association reads: "As a general rule, a physician should not attempt to treat members of his family or himself. Consequently, a physician should cheerfully and without recompense give his professional services to physicians or their dependents if they are in his vicinity;" and

WHEREAS, Physicians are called on to care for physicians or their families who may come from the vicinity or from a distance for consultation, and as insurance to pay for professional medical services may be available as recompense; therefore be it

Resolved, To amend Chapter IV, Section 1, of the Principles of Medical Ethics to delete the words "consequently," "and without recompense," and "if they are in his vicinity" so that the section shall read as follows:

As a general rule, a physician should not attempt to treat members of his family or himself nor shall he receive financial recompense for such treatment if rendered. A physician should cheerfully give his professional services to other physicians or their dependents.

REPORT OF REFERENCE COMMITTEE ON MISCELLANEOUS BUSINESS

Dr. Frank H. Krusen, Chairman, Section on Physical Medicine, read the following report, which, after discussion and amendment, was adopted:

Resolution No. 7 on Amendment of Principles of Medical Ethics, Chapter IV, Section 1: Your reference committee supports this resolution in principle but recommends that no action be taken on it, since we have been assured by the chairman of the Judicial Council that this resolution is already fully covered in the Principles of Medical Ethics as already stated and that the Judicial Council has gone on record as stating that it is not unethical for a physician to accept payment from an insurance company for services rendered to a medical colleague or one of his dependents.

Nos. 8 and 9

Dr. Charles M. Hamilton, for the Tennessee delegation, introduced the following two resolutions, Nos. 8 and 9, which were referred to the Reference Committee on Legislation and Public Relations:

No. 8. Resolutions on Social Security and the Youth of the Nation

WHEREAS, The future liability of social security is expanding by leaps and bounds; and

WHEREAS, The taxes to support this measure are wholly inadequate; and

WHEREAS, The burden of this obligation will fall on the shoulders of the next generation; and

WHEREAS, The youth of the nation is unaware of what is being fostered upon them; therefore be it

Resolved, That the American Medical Association insist that the various states promote an educational campaign to inform school children by furnishing literature to be read, by speeches in schools, or possibly by offering awards for the best paper read in high schools on social security; and be it further

Resolved, That the American Medical Association furnish material for such a program; and be it further

Resolved, That assistance be elicited from Chambers of Commerce and other civic organizations.

No. 9. Resolutions on Exploitation of Social Security

WHEREAS, The gradual expansion of social security, in both benefits and those eligible to receive them, has brought upon the citizens of the United States an obligation greater than the national debt; and

WHEREAS, The taxes collected to meet this liability are only a trivial token gesture; and

WHEREAS, Social security is being exploited politically by both parties; therefore be it

Resolved, That the American Medical Association recommend to the Congress that the social security program be put on a sound actuarial basis; and be it further

Resolved, That the entire framework of social security be completely separated from the general tax fund.

REPORT OF REFERENCE COMMITTEE ON LEGISLATION AND PUBLIC RELATIONS

The report of the reference committee on Resolutions No. 8 and 9 will be found following supplementary report F of the Board of Trustees on page 1650 of the Dec. 24, 1955, issue of THE JOURNAL.

No. 10. Formulation of Contract to be Offered by Medical Society Sponsored Voluntary Health Insurance Plans

Dr. Raymond M. McKeown, on behalf of the Oregon State Medical Society, presented the following resolution, which was referred to the Reference Committee on Insurance and Medical Service:

WHEREAS, The American Medical Association is deeply interested in the sound development of all forms of voluntary health insurance; and

WHEREAS, The Association is especially interested in the healthy growth of the voluntary health insurance plans sponsored by its constituent and component medical societies; and

WHEREAS, The medical society sponsored plans are and should continue to be independent and free to offer contracts to meet the particular needs of their respective localities; and

WHEREAS, Each medical society sponsored plan nevertheless needs to be in a position to participate with other medical society sponsored plans in offering organizations engaged in interstate operations a contract containing uniform minimum standard provisions; and

WHEREAS, The Council on Medical Service of the Association is equipped to develop such a contract in collaboration with representatives of the medical society plans; therefore be it

Resolved, That the Council on Medical Service be authorized and directed to arrange, at the earliest practicable date, a national meeting to which all the medical society sponsored plans shall be invited to send representatives to collaborate in formulating such a contract and to consider such other matters of mutual concern as the Council and the participating medical society sponsored plans may jointly deem desirable.

REPORT OF REFERENCE COMMITTEE ON INSURANCE AND MEDICAL SERVICE

Dr. Lewis A. Alesen, Chairman, California, submitted the following report, which was adopted:

Resolution No. 10 on Formulation of Contract to be Offered by Medical Society Sponsored Voluntary Health Insurance Plans: Your committee listened to considerable discussion on this resolution. It was the consensus of those speaking that there is indeed a distinct need for a greater degree of uniformity and for some minimum standard provisions by medical society sponsored voluntary health insurance plans. On the other hand, because of geographic, legal, and other considerations, there are many obstacles in the way of this goal. In addition, your committee believes that this is appropriately a task to be performed by the plans themselves, and particularly the Blue Shield Commission, and is not properly in the province of the American Medical Association. It is the understanding of your committee that at this time several agencies are making studies looking toward some solution for this obviously perplexing problem. Your committee, therefore, recommends that this resolution be not adopted.

No. 11. Resolutions on Creation of a Medical Practices Committee

Dr. Lester D. Bibler, Section on General Practice, introduced the following resolutions, which were referred to the Reference Committee on Insurance and Medical Service:

WHEREAS, A special committee of the American Medical Association whose report was given to the House of Delegates in June, 1955, has completed an intensive study of the basic causes leading to certain unethical practices and to unfavorable publicity; and

WHEREAS, The findings and recommendations of this committee should be studied and put into practical operation by the American Medical Association; therefore be it

Resolved, That a Medical Practices Committee be created by the American Medical Association to begin study of the relative value of diagnostic, medical, and surgical services for the whole of the practice of medicine and surgery; and be it further

Resolved, That this committee assist the Public Relations Department of the American Medical Association to present a program of public education on the value of diagnostic and medical care; and be it further

Resolved, That this committee use its full influence to discourage any arbitrary restrictions by hospitals against general practitioners as a group or as individuals; and be it further

Resolved, That this committee reaffirm and enforce action of this House of Delegates in 1947 "that any rule barring a physician from staff privileges because he does not hold board certification or membership in a specialty society is absolutely against the American Medical Association policy."

No. 12. Resolutions on Creation of Permanent Committee on Medical Practices

Dr. Wendell C. Stover, for the Indiana delegation, introduced the following resolutions, which also were referred to the Reference Committee on Insurance and Medical Service:

WHEREAS, The report of the interim Committee on Medical Practices was presented to this House of Delegates in June, 1955, in which the committee has completed its intensive study of the basic causes leading to certain unethical practices and to unfavorable publicity; and

WHEREAS, The findings and recommendations of this committee deserve the intensive study by the physicians of this country and by the American Medical Association, which should put said recommendations into practical operation; now therefore be it

Resolved, That a permanent Committee on Medical Practices be created in the American Medical Association to conduct a continuing study of the relative value of diagnostic, medical, and surgical services and to report its findings and recommendations to this House in the same manner as is now followed by other committees and councils of the Association; and be it further

Resolved, That this committee cooperate in every way and assist the Public Relations Department of the American Medical Association to present a program of public education designed to bring about a better understanding of all fields of medical practices; and be it further

Resolved, That this committee use its full influence to discourage any arbitrary restrictions by hospitals against general practitioners as a group or as individuals.

REPORT OF REFERENCE COMMITTEE ON INSURANCE AND MEDICAL SERVICE

The report of the reference committee on Resolutions No. 11 and 12 will be found following supplementary report F of the Board of Trustees on page 1652 of the Dec. 24, 1955, issue of THE JOURNAL.

No. 13. Resolutions on Distribution of Salk Vaccine

Dr. Eli S. Jones, on behalf of the Indiana delegation, presented the following resolutions, which were referred to the Reference Committee on Hygiene, Public Health, and Industrial Health:

WHEREAS, The physicians of the United States, through their local medical societies voluntarily cooperated with the National Foundation for Infantile Paralysis in the nationwide tests of the efficiency of the Salk polio vaccine; and

WHEREAS, The National Foundation for Infantile Paralysis then used funds to purchase vaccine for free inoculation of all first and second grade children without consideration of parental ability to pay; and

WHEREAS, The United States government has appropriated money to further the free inoculation of individuals without regard for financial resources of such individuals to provide such services for themselves at their own expense; and

WHEREAS, Both the National Foundation and the government programs set an unnecessary and needless precedent; and

WHEREAS, Such activities entered upon by voluntary health organizations or governmental units on a universal basis are in direct violation of the essential principles of free enterprise and sound medical practices; now therefore be it

Resolved, That the American Medical Association condemns the practice of voluntary health organizations and the government supplying vaccine free of charge to the public of this nation and insist upon immediate termination of such practices except the practice of providing this benefit to individuals of this nation financially unable to pay for such services; and be it further

Resolved, That the Board of Trustees be empowered and instructed to voice opposition in behalf of the physicians of the United States to these and any subsequent programs violating the principles of free enterprise and sound medical practices, calling attention to the willingness of the physicians of this country to cooperate in seeing that every deserving person in this nation will receive the benefits of preventive medicine if the honest need is made known.

REPORT OF REFERENCE COMMITTEE ON HYGIENE, PUBLIC HEALTH, AND INDUSTRIAL HEALTH

The report of the reference committee on Resolution No. 13 will be found following Resolution No. 2 on page 1759 of this issue of THE JOURNAL.

No. 14

The Speaker announced that Resolution No. 14 had been withdrawn.

No. 15. Resolutions on Establishment of Cancer Commissions by State Medical Societies

Dr. George A. Unfug, Colorado, introduced the following resolutions, which were referred to the Reference Committee on Hygiene, Public Health, and Industrial Health:

WHEREAS, The many claims for new methods of diagnosing and treating cancer that are not presented through the usual medical channels of communication or supported by adequate scientific and clinical evidence of value have created grave problems for practicing physicians and for those agencies and leaders responsible for public health and for advising the public; and

WHEREAS, The American Association for Cancer Research, the American Cancer Society, the American Medical Association, the Damon Runyon Memorial Fund for Cancer Research, the Food and Drug Administration, and the National Cancer Institute, because of concern over this situation, sought aid from the National Academy of Sciences which established the Committee on Cancer Diagnosis and Therapy within the National Research Council to study this problem; and

WHEREAS, The studies of this committee over a period of four and one-half years have led to the conclusion that since such claims gain their original public support locally, thus creating their first impact on a restricted community, and only later, and often as a result of sporadic promotional efforts by a few prominent individuals, do the proposals receive national attention, it is logical so to design protective procedures as to handle such situations at the local level; therefore be it

Resolved, That the collection and evaluation of scientific and clinical evidence on claims for the diagnosis and treatment of cancer be recognized as a responsibility of state and regional medical societies; and be it further

Resolved, That the state medical societies be encouraged to establish state cancer commissions or committees to assume this responsibility, following the general pattern developed by the California Medical Association and working in close cooperation with other local and national health agencies; and be it further

Resolved, That the House of Delegates of the American Medical Association urges the state medical societies to establish such groups, and that at an opportune time the Association arrange a conference of representatives from the various state medical societies (in cooperation with the other sponsoring agencies and the Committee on Cancer Diagnosis and Therapy, if this is desired) for the consideration of effective organizations and study mechanisms.

REPORT OF REFERENCE COMMITTEE ON HYGIENE, PUBLIC HEALTH, AND INDUSTRIAL HEALTH

Dr. L. Howard Schriver, Chairman, Utah, read the following report, which was adopted:

Resolution No. 15 on Establishment of Cancer Commissions by State Medical Societies: Your committee approves Resolution No. 15 and recommends its referral to the Board of Trustees for implementation.

No. 16. Resolution on Survey of Medical Profession by State Societies Regarding Social Security Act

Dr. Clifford C. Sherburne, on behalf of the Ohio State Medical Association, introduced the following resolution, which was referred to the Reference Committee on Legislation and Public Relations:

WHEREAS, Misunderstanding exists about the position of the medical profession on the question of the inclusion of physicians in the Old Age and Survivors Insurance provisions of the federal Social Security law; and

WHEREAS, The Ohio State Medical Association, in accordance with a mandate from its House of Delegates, made a survey of its membership on this question; and

WHEREAS, The Ohio State Medical Association sent ballots and pro and con material to 8,360 members, asking them to vote on the following: "Do you favor extension of the Old Age and Survivors benefits coverage of the federal Social Security Act to physicians? If your answer is 'Yes' do you believe participation by physicians should be: Compulsory or voluntary?"; and

WHEREAS, Four thousand nine hundred and twelve ballots were returned, approximately 60% of those sent out, with the following results: 2,441 ballots were marked "no" indicating that those physicians are not in favor of social security coverage for physicians on any basis; only 370 votes were cast in favor of compulsory coverage; those favoring voluntary participation numbered 2,070 and 19 physicians voted in favor of coverage but without stating a preference; 12 ballots could not be tabulated because of irregularity in answering the questions; and

WHEREAS, The poll conducted by the Ohio State Medical Association clearly indicates that an overwhelming majority of the members voting are opposed to compulsory inclusion of physicians in the federal social security law, with a substantial number favoring participation on a voluntary basis; therefore be it

Resolved, That the House of Delegates of the American Medical Association recommend to state societies that they make a similar survey to that conducted in Ohio, if they have not already done so, and that the results of the poll be transmitted to the Board of Trustees of the American Medical Association.

REPORT OF REFERENCE COMMITTEE ON LEGISLATION AND PUBLIC RELATIONS

Dr. Paul A. Davis, Chairman, Ohio, read the following report, which was adopted:

Resolution No. 16: Your committee has given serious study to this resolution. In view of the various controversial questions which have arisen, the committee offers the following substitute resolution:

WHEREAS, Misunderstanding exists about the position of the medical profession on the question of the inclusion of physicians in the Old Age and Survivors Insurance provisions of the Social Security Act; therefore be it

Resolved, That the House of Delegates of the American Medical Association recommend to state societies that they poll their entire membership on this question, and that the results of the poll be transmitted to the Board of Trustees of the American Medical Association as soon as possible.

No. 17. Resolutions on Medical Representation on Voice of America

Dr. George W. Slagle, for the Michigan delegation, introduced the following resolutions, which were referred to the Reference Committee on Legislation and Public Relations:

WHEREAS, Health conditions in all other countries of the world affect the health of the people of Michigan; and

WHEREAS, The practice of medicine in Michigan is influenced by methods of practice in nations other than the United States; and

WHEREAS, The Voice of America can be a powerful influence to spread to all nations the health knowledge of American medicine and the advantages to patients and professions of the system of medical practice current in the United States today; and

WHEREAS, Expression of this health and medical information can be made best by representatives selected from the American medical profession; therefore be it

Resolved, That the American Medical Association request the Voice of America to include in its regular programs some programs prepared and presented by representatives of the American Medical Association; and be it further

Resolved, That the Board of Trustees of the American Medical Association be respectfully requested to defray the expenses and salaries involved in supplying personnel for the above purposes to the Voice of America.

REPORT OF REFERENCE COMMITTEE ON LEGISLATION AND PUBLIC RELATIONS

Dr. Paul A. Davis, Chairman, Ohio, submitted the following report, which was adopted:

Resolution No. 17 on Medical Representation on Voice of America: Your committee recommends the adoption of this resolution, with the following changes: (1) That in the first and the second "Whereas" the words "the people of Michigan" be changed to read "the people of the United States," and that in the third "Whereas," after the words "The Voice of America," the following be inserted "and/or Radio Free Europe," and (2) that these same words be inserted in the first and the second "Resolved."

No. 18. Resolution on American Medical Association Study Committee on Highway Accidents

Dr. Clarence I. Owen, for the Michigan delegation, presented the following resolution, which was referred to the Reference Committee on Hygiene, Public Health, and Industrial Health:

Resolved, That the American Medical Association House of Delegates request the Board of Trustees to study the prevention of highway accidents.

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REPORT OF REFERENCE COMMITTEE ON HYGIENE, PUBLIC HEALTH, AND INDUSTRIAL HEALTH

Dr. L. Howard Schriver, Chairman, Ohio, presented the following report, which was adopted:

Resolution No. 18 on American Medical Association Study Committee on Highway Accidents: Your reference committee approves Resolution No. 18.

No. 19. Resolution on National Regulation of Automobile Safety Standards

Dr. Clarence I. Owen, for the Michigan delegation, introduced the following resolution, which was referred to the Reference Committee on Hygiene, Public Health, and Industrial Health:

WHEREAS, Traffic accidents in the United States claim 38,000 lives and 1,250,000 injured each year, with a probable 45% increase in vehicle mileage in the next ten years; and

WHEREAS, This death and accident toll could be materially reduced through improvement in automotive safety design and construction; and

WHEREAS, All other modes of public transportation except that by automobile are already safeguarded by federal safety standards; therefore be it

Resolved, That the American Medical Association, through its House of Delegates, strongly urges the President of the United States to request legislation from Congress authorizing the appointment of a national body to approve and regulate safety standards of automobile construction.

REPORT OF REFERENCE COMMITTEE ON HYGIENE, PUBLIC HEALTH, AND INDUSTRIAL HEALTH

Dr. L. Howard Schriver, Chairman, Ohio, read the following report, which was adopted:

Resolution No. 19 on National Regulation of Automobile Safety Standards: Your committee approves Resolution No. 19 and recommends that it be referred to the present committee entitled, "Committee on Crash Injuries," its title being changed, however, to "Medical Aspects of Automobile Injuries and Deaths," and your reference committee recommends that this committee interest itself at once in this very important health problem.

No. 20. Resolutions on Report of Board of Trustees on Report of Committee on Medical Practices

Dr. John S. DeTar, for the Michigan delegation, introduced the following resolutions, which were referred to the Reference Committee on Insurance and Medical Service:

WHEREAS, Action on the recommendation of the Board of Trustees concerning the report of the Committee on Medical Practices was postponed until this meeting, allowing all delegates an opportunity to study the report; therefore be it

Resolved, That the recommendations of the Board of Trustees be approved, with the following additional qualifications:

1. That the Council on Medical Service be instructed to continue its studies on professional services indices (relative value scales), utilizing as consultants representatives of the specialties, general practice, and the voluntary insurance plans;

2. That the American Medical Association communicate to the specialty boards and to the specialty societies the findings made by the Committee on Medical Practices, encouraging the boards and societies to reappraise the value of their regulations restrictive on the practice of those seeking or holding board certificates or specialty society memberships;

3. That the American Medical Association reaffirm the action of the House of Delegates of 1947 as follows: "It was never intended that staff appointments in hospitals generally, or even in hospitals approved for residencies, should be limited to board certified physicians, as is now the policy in some hospitals. Such policies, if practiced extensively, are detrimental to the health of the people and therefore to American Medicine. Hospital staff appointments should depend on the qualifications of physicians to render proper care to hospitalized patients as judged by the professional staff of the hospital and not on certification or special society membership";

4. And further, that the American Medical Association continue to use its full influence to discourage the arbitrary restriction by hospitals against general practitioners as a group, regardless of their qualifications as individuals, by (*a*) encouragement by the Council on Medical Education and Hospitals of departments of general practice in all general hospitals where practicable, and (*b*) approval of the expressed policy of the Joint Commission on Accreditation of Hospitals of hospital staff rules which permit to the generalist privileges in the departments of medicine, surgery, obstetrics, and pediatrics in accordance with his demonstrated ability; and be it further

Resolved, That a copy of this resolution be sent to the American College of Surgeons, the American College of Physicians, the American Academy of Pediatrics, the American Academy of Obstetrics and Gynecology, the American Academy of General Practice, the American Hospital Association, the Catholic Hospital Association, the American Protestant Hospital Association, and the chief of staff of every hospital in the United States and its territories.

REPORT OF REFERENCE COMMITTEE ON INSURANCE AND MEDICAL SERVICE

The report of the reference committee on Resolution No. 20 will be found following supplementary report F of the Board of Trustees on page 1652 of the Dec. 24, 1955, issue of THE JOURNAL.

No. 21. Resolution on Alphabetical Listing of Alaska and Hawaii in American Medical Association Publications

Dr. George W. Slagle, on behalf of the Michigan delegation, submitted the following resolution, which was referred to the Reference Committee on Reports of Board of Trustees and Secretary:

WHEREAS, The Hawaii Medical Association will be 100 years old next year, having been incorporated in 1856 under the Hawaiian monarchy; and

WHEREAS, The Hawaii Medical Association has been a constituent association of the American Medical Association for half a century, having been represented in the House of Delegates at most sessions since 1904 and at all sessions since 1930; and

WHEREAS, Hawaii is an integral part of the United States of America, as shown by the fact that its residents are citizens and pay the federal income tax, and by a recent federal court decision holding that travel to Hawaii does not constitute travel outside the United States; and

WHEREAS, The District of Columbia is routinely listed in alphabetical sequence among the states in all publications and studies by the American Medical Association, while Hawaii is either omitted, or listed with "foreign countries" or "possessions," or at best brings up the rear, following Wyoming; and

WHEREAS, The Alaska Territorial Medical Association enjoys, in all respects except size, a status equivalent to that of Hawaii; now therefore be it

Resolved, That in all future studies or publications of the American Medical Association all constituent societies be listed in alphabetical order regardless of whether those societies are state or territorial.

REPORT OF REFERENCE COMMITTEE ON REPORTS OF BOARD OF TRUSTEES AND SECRETARY

Dr. Homer M. Izumi, Chairman, Hawaii, presented the following report, which was adopted:

Resolution No. 21 on Alphabetical Listing of Alaska and Hawaii in American Medical Association Publications: Your committee agrees that the listing in the American Medical Association publications should be in alphabetical order.

No. 22. Resolutions on Medical Society-Sponsored Voluntary Prepaid Medical Care Plans

Dr. Thomas J. Danaher, Connecticut, on behalf of the Connecticut delegation, Dr. Charles G. Hayden, Massachusetts, and the New Jersey delegation, introduced the following resolutions, which were referred to the Reference Committee on Insurance and Medical Service:

WHEREAS, The participating and cooperating physicians of medical care plans sponsored by county, state, and local medical societies are making a valuable contribution in the public interest by furthering the development of voluntary prepaid medical care for the people of America; and

WHEREAS, More than 100,000 members of the American Medical Association are participating in physician-sponsored prepaid medical care plans; therefore be it

Resolved, That this House of Delegates commends these physicians and the medical society-sponsored plan in which they participate for the important services being rendered in health care for the American people; and be it further

Resolved, That the American Medical Association reaffirm its approval of medical society-sponsored nonprofit prepaid medical care plans as a means for financing medical care.

REPORT OF REFERENCE COMMITTEE ON INSURANCE AND MEDICAL SERVICE

Dr. Lewis A. Alesen, Chairman, California, read the following report, which was adopted:

Resolution No. 22 on Medical Society-Sponsored Voluntary Prepaid Medical Care Plans: Your committee concurs in the objectives, philosophy, and mode of their expression in this resolution with the one exception that it is your committee's understanding that some commendation has been given formerly by the House of Delegates in the past. Therefore, the resolution is presented with the third "Whereas" deleted. Your committee also suggests that wherever the words "participating physicians" appear, they be amended to read, "participating and cooperating physicians." With these amendments the committee recommends that the resolution do pass.

No. 23. Resolutions on the Practice of Pathology

Dr. Clark Bailey, for the Kentucky delegation, introduced the following resolutions, which were referred to the Reference Committee on Medical Education and Hospitals:

WHEREAS, The American system of private practice of medicine has given us the highest health and medical standards in the world; and

WHEREAS, The American Medical Association has publicly declared its stand in favor of this system of private practice; and

WHEREAS, The practice of pathology including both clinical pathology and anatomic pathology has been regarded as the practice of medicine; and

WHEREAS, In certain states whose laws concerning the practice of medicine are similar to our own the attorneys general have officially interpreted the operation of laboratories, x-ray departments, and anesthesia departments by corporations such as hospitals as illegal and acceptance of salaries or commissions from such corporations by licensed practitioners of medicine as unethical fee splitting; and

WHEREAS, As a result of this interpretation an attempt is being made by certain lay groups to cause revision of the law or its interpretation to permit division of pathology into professional and technical service, the former being personal labor of the pathologist and therefore being the practice of medicine, the latter being the work of the technical assistants who perform under his direction and supervision and therefore not the practice of medicine and legally practiced by a hospital; and

WHEREAS, If this position should be sustained the practice of pathology and thus of all medicine would be in danger of being taken over piecemeal by nonmedical personnel and corporations to the detriment of both patients and physicians; and

WHEREAS, As early as 1943 the American Medical Association studied this problem and stated that the "House of Delegates of the American Medical Association is opposed to the division of any branch of medical practice into so-called technical and professional factions," and also that "the practice of anesthesiology, pathology, physical medicine, and radiology are an integral part of the practice of surgery, internal medicine, or any other designated field of medicine"; therefore be it

Resolved, That the House of Delegates of the Kentucky State Medical Association is opposed to the division of any branch of medical practice into so-called technical and professional factions and furthermore instructs its delegates to the American Medical Association to maintain this position; and be it further

Resolved, That because of the confusion existing in many states in regard to this question, that the House of Delegates of the American Medical Association reaffirm its position taken in 1943.

REPORT OF REFERENCE COMMITTEE ON MEDICAL EDUCATION AND HOSPITALS

Dr. George M. Fister, Chairman, Utah, read the following report, which was adopted:

Your reference committee has reviewed resolution No. 23 submitted by the Kentucky delegation in regard to its resolution on the practice of pathology. Your reference committee agrees with the intent of the resolution but for purposes of clarity would like to recommend its adoption in amended form. Your committee is, therefore, suggesting that the resolution be worded as follows:

WHEREAS, The American system of private practice of medicine has given us the highest health and medical standards in the world; and

WHEREAS, The American Medical Association has publicly declared its stand in favor of this system of private practice; and

WHEREAS, The practice of pathology, including both clinical and anatomic pathology, is the practice of medicine; and

WHEREAS, In many states the attorneys general have written opinions stating that the operation of laboratories and departments of radiology and anesthesia by corporations, including hospitals, is illegal, and that the acceptance of employment from such corporations by a licensed practitioner of medicine under terms permitting the corporation to charge a fee for his services is unethical fee splitting and illegal; and

WHEREAS, As a result of such interpretations attempts are being made by certain lay groups to amend the laws, or their interpretations, to permit the division of pathology into professional and technical services, the latter to be the work of the pathologist's technical assistants who perform under his direction and supervision and not to be considered the practice of medicine and, therefore, services which may be legally performed by a hospital; and

WHEREAS, If this position should be sustained, fragmentation of the practice of pathology would be accomplished and thus all medicine would be in danger of being so divided to the detriment of the patient; and

WHEREAS, As early as 1943 the American Medical Association studied this problem and stated that the "House of Delegates of the American Medical Association is opposed to the division of any branch of medical practice into so-called technical and professional factions," and later, in 1951, that "the practice of anesthesiology, pathology, physical medicine, and radiology are an integral part of the practice of medicine in the same category as the practice of surgery, internal medicine, or any other designated field of medicine"; therefore be it

Resolved, That the House of Delegates of the American Medical Association is opposed to the division of any branch of medical practice into so-called technical and professional services; and be it further

Resolved, That because of the confusion existing in some states in regard to this question this House of Delegates reaffirm the position taken in 1943 and 1951.

Nos. 24 and 25

Dr. Clark Bailey, on behalf of the Kentucky delegation, introduced the two following resolutions, Nos. 24 and 25, which were referred to the Reference Committee on Medical Education and Hospitals:

No. 24. Resolution on Present Standards as Prescribed by Joint Commission on Accreditation of Hospitals

WHEREAS, The individual and private practice of medicine has raised American Medicine to its present high level envied by all nations; and

WHEREAS, Any system which deprives any doctor, hospital, or groups of doctors or hospitals of their initiative will result in lowered standards of medical care; and

WHEREAS, Any organization or groups of organizations which dictate standardization on a national level without adequate consideration of varying local problems results in the deprivation of said initiative; and

WHEREAS, The establishment of such standards to be met on a national scale should only be arrived at by the collective opinions of the individual hospitals and doctors involved; and

WHEREAS, The present standards, as prescribed by the Joint Commission on Accreditation of Hospitals, have been arrived at by autocratic rather than by democratic methods; and

WHEREAS, This autocratic system does not take into consideration the local, economic, and medical factors of each hospital, which may be different depending on the type, size, degree of departmentalization, and financial resources, etc.; and

WHEREAS, Impractical standards for hospitals have already increased the cost of hospital care and will continue to increase hospital costs with no resulting benefit to the patient; and

WHEREAS, The private practice of medicine is striving to lower hospital costs to patients and to increase voluntary prepaid hospitalization insurance at a premium which can be afforded by all income groups; and

WHEREAS, Requirements of the Joint Commission on Accreditation of Hospitals cause a definite increase in all hospitalization costs by demanding unnecessary routine laboratory procedures and additional administrative costs; and

WHEREAS, The medical profession is constantly being burdened by more and more rules and regulations; and

WHEREAS, These various rules and regulations cause more and more time to be spent at various and sundry unnecessary meetings; and

WHEREAS, These various meetings tend to separate the medical profession into various hospital groups to the detriment of the unity and strength of county and state medical societies, which are the backbone of American medicine; and

WHEREAS, This disunity, increased cost of medical care, and possible breakdown of prepaid voluntary health insurance plans open the way to regimentation and governmental control of the practice of medicine; and

WHEREAS, The inspections done in the past have frequently been made by personnel of the Joint Commission on Accreditation of Hospitals unfamiliar with the private practice of medicine; and

WHEREAS, The results of inspection have obviously been discriminatory in many respects; and

WHEREAS, Many of the criticisms offered by inspectors in individual instances have indicated obvious prejudice and lack of thorough understanding of the local situation; and

WHEREAS, The Campbell-Kenton Counties Medical Society of Kentucky, feels keenly its responsibility for the health needs of the people of our community and all communities and is ever alert and anxious to institute and promote methods and practices which will better accomplish this purpose; and

WHEREAS, The Campbell-Kenton Counties Medical Society of Kentucky strongly feels that the methods of the Joint Commission on Accreditation of Hospitals have failed to promote these ideals; and

WHEREAS, The Kentucky State Medical Association now goes on record as vigorously opposing the present system, methods of operation, and standards of the Joint Commission on Accreditation of Hospitals; therefore be it

Resolved, That the delegates from Kentucky to the American Medical Association present this resolution to the House of Delegates of the American Medical Association at its next meeting and work vigorously for the adoption of this resolution.

No. 25. Resolution on Opposition to Policy of Joint Commission on Accreditation of Hospitals in Limiting Number of Courtesy Staff Memberships in Private General Hospitals

WHEREAS, Local traditions and usages have made good medical care often contingent on each physician having staff privileges in two or more hospitals; and

WHEREAS, Pressure is currently being applied by the Joint Commission on Accreditation of Hospitals to cause local private hospitals to limit the number of physicians who may hold courtesy staff privileges; and

WHEREAS, This policy seems to connote a disregard of the patient's choice in hospitals and creates a community problem; and

WHEREAS, The House of Delegates of the Kentucky State Medical Association expresses opposition to the policy of the Joint Commission on Accreditation of Hospitals regarding the number of courtesy staff memberships in private general hospitals; therefore be it

Resolved, That the Kentucky delegates to the American Medical Association be instructed by this resolution to represent members of the Kentucky State Medical Association as being opposed to this policy at the next meeting of the House of Delegates of the American Medical Association.

REPORT OF REFERENCE COMMITTEE ON MEDICAL EDUCATION AND HOSPITALS

Dr. George M. Fister, Chairman, Utah, presented the following report, which was adopted:

Your reference committee has reviewed Resolution No. 24, submitted by the Kentucky delegation, on the present standards as prescribed by the Joint Commission on Accreditation of Hospitals, and Resolution No. 25, also submitted by the Kentucky delegation, dealing with opposition to the policy of the Joint Commission in limiting the number of courtesy staff members in private hospitals. These two resolutions, in the opinion of your reference committee, fall within the area of study which is now being made by the special committee which has been appointed to study the activities of the Joint Commission on Accreditation of Hospitals. Your reference committee recommends that no action be taken on these resolutions at this time and that they be referred to the special committee now studying similar problems with the request that they report on them at the June meeting in 1956.

No. 26. Resolution on Guiding Principles Recommended by Committee on Medical Care for Industrial Workers

Dr. Clark Bailey, for the Kentucky delegation, introduced the following resolution, which was referred to the Reference Committee on Insurance and Medical Service:

WHEREAS, Guiding Principles in regard to health center plans were recommended by the Committee on Medical Care for Industrial Workers of the Councils on Medical Service and Industrial Health and printed in THE JOURNAL following the last annual meeting in Atlantic City; and

WHEREAS, These Guiding Principles will be an order of business for adoption before the American Medical Association House of Delegates; and

WHEREAS, The house of delegates of the Kentucky State Medical Association recommends the deletion of the term "Joint Commission on Accreditation of Hospitals," from Section VI (C); and

WHEREAS, The house of delegates of the Kentucky State Medical Association recommends "the rewriting of Section X, public and community relations, of the same report to remove the ambiguity in this section, relative to the free choice of physicians"; and

WHEREAS, A special committee was authorized by the American Medical Association House of Delegates at the 1955 Atlantic City meeting to study the functions of the Joint Commission on Accreditation of Hospitals and the adoption of the aforenamed principles would be presumptuous and precocious; therefore be it

Resolved, That the House of Delegates of the American Medical Association be asked to accomplish the deletion and rewriting of the paragraphs referred to above as requested by the house of delegates of the Kentucky State Medical Association in the interest of better medical practice.

REPORT OF REFERENCE COMMITTEE ON INSURANCE AND MEDICAL SERVICE

Dr. Lewis A. Alesen, Chairman, California, read the following report, which was adopted:

Resolution No. 26 and Guiding Principles for Evaluating Management and Union Health Centers: Your reference committee considered Resolution No. 26 in connection with the item entitled, "Guiding Principles for Evaluating Management and Union Health Centers contained in the report of the Council on Medical Service.

Special attention is directed to this subject, which drew considerable discussion from a number of interested parties. This discussion resulted in almost complete approval when Section X was amended in accordance with suggestions made by the Kentucky delegation and when Section VI (C) was deleted. At present Section X reads as follows:

X. Public and Community Relations—There are many social, public health, and welfare agencies, both public and voluntary, concerned with the health and well being of local citizens. It is the responsibility of health center personnel to maintain good and effective relations with the staffs of such organizations. It is, therefore, of the greatest importance that persons eligible to participate in the health center's program know that they are free to seek medical care from whomsoever and wheresoever they wish. They should be made aware, however, that unless management or health center programs provide for the payment of such services, they are not obligated to contribute to the payment of services obtained outside of their medical program.

Finally, to the extent that these guiding principles are observed, the medical profession will improve the quality of medical care accorded the patient and the community.

This has been amended to read: "As one aspect of this responsibility the health center is urged to provide, insofar as possible, a free choice of medical service to the patient it serves. When service outside a specific center facility cannot be paid for under the terms of the plan, patients should be informed that they are privileged to obtain such services as they wish outside the center at their own expense."

Section VI (C) which is to be deleted, reads as follows: "The basic requirements established for all approved hospitals and outpatient departments according to the criteria of the Joint Commission for Accreditation of Hospitals should apply to the medical staffs of agencies serving this field."

No. 27. Resolution on Rehabilitation Consultation Service

Dr. Hugh H. Hussey, District of Columbia, introduced the following resolution, which was referred to the Reference Committee on Hygiene, Public Health, and Industrial Health:

WHEREAS, The handicapped person looks to the medical profession for treatment to restore him or her to a status of work ability or self-help; and

WHEREAS, There are few facilities in the United States which miantain a complete restoration program for the disabled; and

WHEREAS, Numerous lay-sponsored and lay-supported agencies supply partial restorative facilities manned for the most part by personnel having little or no medical supervision; and

WHEREAS, Teaching and training programs in these facilities can give instruction only in limited areas of rehabilitation; and

WHEREAS, Rehabilitation is a broad concept involving the integrated use of multiple disciplines, including medicine, education, counseling, job placement, and others in which medicine should logically accept the over-all responsibility for the general program and to the handicapped individual; and

WHEREAS, There is no organized service or policy now existing in the program of the American Medical Association; therefore be it

Resolved, That the House of Delegates of the American Medical Association establish an integrated consultation service to state societies and outline a policy of procedure for the guidance of local professional groups in dealing with the total program of rehabilitation.

REPORT OF REFERENCE COMMITTEE ON HYGIENE, PUBLIC HEALTH, AND INDUSTRIAL HEALTH

Dr. L. Howard Schriver, Chairman, Ohio, submitted the following report, which was adopted:

Resolution No. 27 on Rehabilitation Consultation Service: Your committee approves Resolution No. 27 in principle and believes the medical profession should take a leading part in this project.

No. 28. Resolutions on General Practice

Dr. Kenneth C. Sawyer, Colorado, presented the following resolutions, which were referred to the Reference Committee on Insurance and Medical Service:

WHEREAS, The preservation of the general practice of medicine is considered to be in the interests of comprehensive medical care; and

WHEREAS, Access to hospital facilities is considered to be an absolute necessity for the good practice of medicine; and

WHEREAS, The trend toward specialization has advanced to an extent which jeopardizes the supply of generalists in the foreseeable future; and

WHEREAS, It is the duty of the American Medical Association to assume an active role in all matters affecting the medical care of the American people; therefore be it

Resolved, That the American Medical Association approve of the medical school teaching programs which afford the medical student opportunity for experience in the general practice of medicine; and be it further

Resolved, That the Council on Medical Education and Hospitals be directed to utilize all possible means to stimulate the formation of a department of general practice in each medical school; and be it further

Resolved, That the Council on Medical Education and Hospitals be directed to develop and utilize all means to implement, improve, and extend the two-year general practice internship-residency program; and be it further

Resolved, That the American Medical Association condemn hospital staff policies which exclude or arbitrarily restrict the general practitioner from hospital privileges essential for the general practice of medicine; and be it further

Resolved, That the American Medical Association approve hospital staff rules which permit the generalist staff privileges in the departments of medicine, pediatrics, obstetrics, and surgery in accordance with his demonstrated professional competence and experience; and be it further

Resolved, That the Council on Medical Education and Hospitals be instructed to implement this policy by whatever means necessary; and be it further

Resolved, That the representatives of the American Medical Association on the Joint Commission on Accreditation of Hospitals be instructed to stimulate action by that body leading to the warning, provisional accreditation or removal of accreditation of community or general hospitals which exclude or arbitrarily restrict hospital privileges for generalists as a class regardless of their individual professional competence, after appeal to the Commission by the county medical society concerned; and be it further

Resolved, That a copy of this resolution be sent to the dean of each medical school, the American College of Surgeons, the American College of Physicians, the American Academy of Pediatrics, the American Academy of Obstetrics and Gynecology, the American Academy of General Practice, the American Hospital Association, the Catholic Hospital Association, the American Protestant Hospital Association, and the chief of staff of every hospital in the United States and its territories.

REPORT OF REFERENCE COMMITTEE ON INSURANCE AND MEDICAL SERVICE

The report of the reference committee on Resolution No. 28 will be found following supplementary report F of the Board of Trustees on page 1652 of the Dec. 24, 1955, issue of THE JOURNAL.

No. 29.—Resolution on Federal Subsidy for Medical Education

Dr. Joseph B. Copeland, for the Texas delegation, presented the following resolutions, which were referred to the Reference Committee on Legislation and Public Relations:

Preamble: In spite of the fact that more doctors of medicine are now being graduated from the 80 medical schools in the United States than ever before, with acknowledged highest standards of training and without definite federal subsidy, S. 1323 now pending before the 84th Congress with an appropriation of $250,000,000 would clearly launch a program of federal subsidy for medical education. The American Medical Association has consistently held the opinion that federal aid is a "dangerous device because of the degree of regulation which must necessarily accompany federal funds." Under the provisions of S. 1323 the federal government would have the legal right to subsidize the cost of maintenance of the new facilities built under its provisions by allowing the applicant to set aside 20 per cent of the federal grant for "permanent endowment." Past experience has shown that the stipulations of a "temporary emergency" and "single grant" offer no protection against perpetuation, since the same philosophy was incorporated in the Hill-Burton laws which have been extended recently to 1957. Therefore, be it

Resolved, That it is the opinion of this House of Delegates that said S. 1323 represents a definite step toward the socialization of medical education and practice in this country and therefore should be rejected by the Congress; and be it further

Resolved, That copies of this resolution be sent to all members of the Senate and House of Representatives of the 84th Congress.

REPORT OF REFERENCE COMMITTEE ON LEGISLATION AND PUBLIC RELATIONS

Dr. Paul A. Davis, Chairman, Ohio, read the following report, which was adopted:

Resolution No. 29 on Federal Subsidy for Medical Education: This resolution, on S. 1323, runs contrary to the position of the American Medical Association, as reported by the Committee on Legislation. Your reference committee therefore recommends that this resolution be not approved.

No. 30. Resolutions on Appointment of Special Commission to Review the Social Security System

Dr. Joseph B. Copeland, on behalf of the Texas Medical Association, introduced the following resolutions, which were referred to the Reference Committee on Legislation and Public Relations:

Preamble: It is a publicly acknowledged fact and a matter of record that H. R. 7225 of the 84th Congress was passed out of the House Ways and Means Committee without public hearings, without independent actuarial consultation, and against the recommendation of the Department of Health, Education, and Welfare and was passed by the House under a suspension of the rules which prevented adequate debate. It is also apparent that no adequate study or review of the Social Security system has been made by Congress, that very few citizens have any real insight into the legal provisions of the Social Security law and amendments, and that no readily available report has ever been made of the present status of the so-called "Trust Fund" nor of the potential eventual cost of payments as now planned for citizens participating in the Social Security plan. Good business principles and justice would indicate that a very painstaking and openly-reported study should be made of the entire Social Security system before any more changes are made in it. The Senate of the 84th Congress will be having hearings on H. R. 7225 early in 1956; now therefore be it

Resolved, By the House of Delegates of the American Medical Association that we urge the Congress to withhold action on H. R. 7225 and to provide for the appointment of a comprehensive Commission to Review the Social Security System and to report back to Congress and the nation after an adequate study; and be it further

Resolved, That copies of this resolution be sent to the President of the United States and members of his Cabinet, to all members of the 84th Congress, and to all constituent state medical associations.

REPORT OF REFERENCE COMMITTEE ON LEGISLATION AND PUBLIC RELATIONS

The report of the reference committee on Resolution No. 30 will be found following supplementary report B of the Board of Trustees on page 1650 of the Dec. 24, 1955, issue of THE JOURNAL.

No. 31. Resolution on Commendation to Physicians of Iowa

Dr. Percy E. Hopkins, Illinois, introduced on behalf of the Illinois, Colorado, Wisconsin, and Louisiana delegations, the following resolution, which was referred to the Reference Committee on Miscellaneous Business:

WHEREAS, The physicians of Iowa have for the past year been engaged in supporting the position that the practice of medicine is the right of the individual; and

WHEREAS, A decision rendered by a District Court of the state of Iowa upheld this position; and

WHEREAS, This decision is expected to have a far-reaching effect on the practice of medicine throughout the nation; therefore be it

Resolved, That the House of Delegates of the American Medical Association congratulate the physicians of Iowa on the successful outcome of the initial phase of this action, and commends them for the able way in which they presented the position of the American medical profession.

REPORT OF REFERENCE COMMITTEE ON MISCELLANEOUS BUSINESS

Dr. Frank H. Krusen, Chairman, Section on Physical Medicine, presented the following report, which was adopted unanimously:

Resolution No. 31 on Commendation to Physicians of Iowa: Your reference committee is in complete accord with this resolution recommending that the House congratulate the physicians of Iowa on the successful outcome of the initial phase of its action in supporting the position that the practice of medicine

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is the right of the individual. Your committee notes with gratification the decision of the judge in this case, which is in full support of the contentions of the physicians involved. Your committee recommends the adoption of this resolution with expressions of appreciation to the many physicians of Iowa who have labored so industriously in support of the rights of our profession.

No. 32. Resolutions on Chamber of Councillors to American Medicine

Dr. Russel V. Lee, Section on Military Medicine, introduced the following resolutions, which were referred to the Reference Committee on Miscellaneous Business:

WHEREAS, American medicine has been and is deprived of the wise council of certain distinguished physicians whose professional activities have precluded their participation in organized medical affairs; and

WHEREAS, It is desirable that a means be provided whereby the American Medical Association may confer honor upon and official recognition to those physicians who have made great contributions to American medicine and American life; and

WHEREAS, The American Medical Association recognizes that various groups in this country have a vital and increasing interest in health and medical affairs and consequently desire and deserve a voice in the councils of American medicine not presently available to them; therefore be it

Resolved, That the House of Delegates of the American Medical Association hereby set up a special study committee, appointed by the chair, to consider and report to the next annual meeting on methods and means for the establishment of a Chamber of Councillors to American Medicine; and be it further

Resolved, That this study committee be instructed that the objectives of the establishment of this Chamber are: (1) to provide American medicine with a permanent council of advisors, physicians distinguished by attainments and integrity, who shall at appropriate intervals submit a report and recommendations to the House of Delegates of the American Medical Association; (2) to provide a means whereby recognition and honor may be conferred on those who have earned it; and (3) to furnish a forum where those groups that have real and legitimate interests in health affairs may express themselves; and be it further

Resolved, That the study committee be further instructed to consider the method of nomination and election to this Chamber, bearing in mind the primary purpose of including in it the most distinguished physicians of the country and those deserving of honor, and the secondary objective providing representation to such groups as farmers, laborers, industrialists, educators, insurance men, and others who truly have an interest in health affairs; and be it further

Resolved, That the committee furthermore be asked to make recommendations for the constitution and governing of the Chamber, means for its support, and any other matters which the committee deems pertinent to the objective of establishing a Chamber of Councillors to American Medicine.

REPORT OF REFERENCE COMMITTEE ON MISCELLANEOUS BUSINESS

Dr. Frank H. Krusen, Chairman, Section on Physical Medicine, read the following report, which was adopted:

Resolution No. 32 on Chamber of Councillors to American Medicine: Your reference committee reviewed this recommendation that a special study committee be appointed to consider the establishment of a Chamber of Councillors to American Medicine. It is believed that there is some merit to this proposal; however, it is also evident that the American Medical Association has already provided certain means of acknowledging the contributions to medicine of outstanding leaders. Your reference committee recommends that this resolution be referred to the Board of Trustees for consideration.

No. 33. Resolutions on Recognition of General Practitioners in Hospitals

Dr. James M. Kolb, Arkansas, introduced the following resolutions, which were referred to the Reference Committee on Medical Education and Hospitals:

WHEREAS, In certain hospitals in this country there is discrimination against the general practitioner; and

WHEREAS, The generalists or general practitioners of medicine in this country render most of the medical care to the American people; therefore be it

Resolved, That the American Medical Association through its Council on Medical Education and Hospitals encourage hospital staff rules which permit the general practitioner staff member privileges in the specialty departments in keeping with his merit and demonstrated ability; and be it further

Resolved, That the American Medical Association instruct its representatives on the Joint Commission on Accreditaiton of Hospitals to seek the adoption of the above recommendation by that body.

REPORT OF REFERENCE COMMITTEE ON MEDICAL EDUCATION AND HOSPITALS

Dr. George M. Fister, Chairman, Utah, submitted the following report, which was adopted:

Your reference committee reviewed Resolution No. 33 on Recognition of General Practitioners in Hospitals presented by the Arkansas delegation. Your reference committee is in agreement with the intent of this resolution that the American Medical Association through its Council on Medical Education and Hospitals encourage hospital staff rules which permit the general practitioner staff member privileges in the specialty departments in keeping with his merit and demonstrated ability, and recommends the adoption of this resolution.

No. 34. Resolution on Policies of American Medical Association on Matters Related to the Environment of Medicine

Dr. Joseph B. Copeland, for the Texas delegation, presented the following resolution, which was referred to the Reference Committee on Legislation and Public Relations:

Preamble: Physicians should accept their responsibilities as citizens first. This gives them the privilege and the obligation of taking a stand publicly on matters that involve the environment of medicine and the free enterprise system, all having to do with the public interest and the principles of government on which this country was founded; therefore be it

Resolved, That it is the intention of the House of Delegates of the American Medical Association that this House, the officers, and the proper councils and committees of the American Medical Association, acting in their respective capacities, always should feel free to express publicly the attitude of this Association on matters which involve the environment of medicine and the principles of free enterprise.

REPORT OF REFERENCE COMMITTEE ON LEGISLATION AND PUBLIC RELATIONS

Dr. Paul A. Davis, Chairman, Ohio, presented the following report, which was adopted:

Resolution No. 34 on Policies of the American Medical Association on Matters Related to the Environment of Medicine:

Your committee recommends the adoption of this resolution.

No. 35. Resolution on Cash Disability Benefits in H. R. 7225

Dr. Joseph B. Copeland, for the Texas delegation, introduced the following resolution, which was referred to the Reference Committee on Legislation and Public Relations:

Preamble: The Social Security amendments proposed by H. R. 7225, now pending before Congress of the United States, provide the payment of cash benefits to the "totally and permanently disabled" at age 50 instead of the present age 65. Besides creating an enormous expense estimated at $250,000,000 for the first year, such a proposal very definitely would lead to an encroachment on the private practice of medicine, placing one more segment of medical care under the jurisdiction of the federal government and posing a definite threat to the effectiveness of present rehabilitation programs. The proposal represents another step in the master plan for the nationalization of medicine; now therefore be it

Resolved, That the House of Delegates of the American Medical Association expresses its disapproval of this specific proposal in H. R. 7225 which would provide the payment of cash benefits to the "totally and permanently disabled" at age 50, and calls upon Congress to defeat this legislation.

REPORT OF REFERENCE COMMITTEE ON LEGISLATION AND PUBLIC RELATIONS

The report of the reference committee on Resolution No. 35 will be found following supplementary report B of the Board of Trustees on page 1650 of the Dec. 24, 1955, issue of THE JOURNAL.

No. 36. Resolutions on Blue Shield Prepayment Health Insurance

Dr. L. Howard Schriver, Ohio, introduced the following resolutions, which were referred to the Reference Committee on Insurance and Medical Service:

WHEREAS, By action of the House of Delegates at the interim meeting in Cleveland, December, 1945, the Board of Trustees of the American Medical Association was requested to proceed with investigation and

formation of a national organization to provide and serve the American people with prepayment health protection; and

WHEREAS, The Board of Trustees very promptly, through the Council on Medical Service, did proceed to implement the request of the House of Delegates; and

WHEREAS, In March, 1946, in St. Louis, the Council on Medical Service by its request met with nine representatvies of nonprofit voluntary professionally-sponsored prepayment plans; and

WHEREAS, The Associated Medical Care Plans was formed at that meeting; and

WHEREAS, At the time Associated Medical Care Plans was formed it consisted of nine plans, and the total number of people insured by all existing plans was approximately two million. This organization has grown to 77 plans servicing 44 States and the territories of Puerto Rico and Hawaii, affording prepayment health protection to 33 million people; and

WHEREAS, This is definite evidence of acceptability and confidence of the American people in this type of protection; and

WHEREAS, With actuarial experience, progressive extension and liberalization of protection has been afforded the subscriber; and

WHEREAS, Blue Shield contracts have the minimum of exclusions and waiting periods and no cancellation by the plan of subscriber protection, irrespective of utilization; and

WHEREAS, Blue Shield Plans are sponsored by either state or county medical societies which are component units of the American Medical Association; and

WHEREAS, The services to subscribers are underwritten by an overwhelming majority of the medical profession in the United States and in the territories of Puerto Rico and Hawaii; therefore be it

Resolved, That this House of Delegates approves the actions and accomplishments of the Blue Shield Association of Medical Care Plans; and be it further

Resolved, That this House of Delegates commends professionally-sponsored nonprofit health insurance to the American public.

REPORT OF REFERENCE COMMITTEE ON INSURANCE AND MEDICAL SERVICE

Dr. Lewis A. Alesen, Chairman, California, read the following report, which was adopted:

Resolution No. 36 on Blue Shield Prepayment Health Insurance: The discussion on this resolution was unanimously in favor of its passage with the addition of "as a means of financing medical care" to the last "resolved," and with the amendment of the eighth "whereas" to read as follows: "Whereas, Blue Shield contracts have the minimum of (1) exclusions, (2) waiting periods, and (3) cancellation by the plans of subscriber protection, irrespective of utilization; and" Your committee recommends adoption of this resolution with the amendments.

No. 37. Resolution on Dr. Creighton Barker

Dr. Stanley B. Weld, for the Connecticut delegation, introduced the following resolution, which was adopted by a unanimous rising vote:

WHEREAS, Dr. Creighton Barker, Executive Secretary of the Connecticut State Medical Society, has had the misfortune to sustain various and sundry injuries, which it is hoped may not prove serious, as the result of an automobile head-on collision; and

WHEREAS, Dr. Barker is still confined to bed in the Grace-New Haven Community Hospital; and

WHEREAS, Due to this accident Dr. Barker has been obliged to miss these sessions of the American Medical Association now being held in Boston and to forfeit his place on the panel program planned as part of the Scientific Assembly; therefore be it

Resolved, That the House of Delegates of the American Medical Association herein assembled express to Dr. Barker its deep regret that he is thus disabled and wish for him a speedy recovery.

No. 38

The speaker announced that Resolution No. 38, which was to have been introduced for the Texas delegation, had been withdrawn.

No. 39. Resolution on Illness of Dr. Edward R. Cunniffe

Dr. Floyd S. Winslow, on behalf of the New York delegation, and with the unanimous consent of the House, introduced the following resolution, which was adopted unanimously:

WHEREAS, A message has been received that Dr. Edward R. Cunniffe, for many years Chairman of the Judicial Council of the American Medical Association, is seriously ill; therefore be it

Resolved, That the Secretary of the American Medical Association is hereby requested to express to Dr. Cunniffe's family the regret of the members of this Association for his illness and their earnest hope for his speedy recovery.

SPECIAL REPORT OF REFERENCE COMMITTEE ON HYGIENE, PUBLIC HEALTH, AND INDUSTRIAL HEALTH

Dr. L. Howard Schriver, Chairman, Ohio, presented the following special report and moved that it be adopted and a copy sent to Dr. Peterson's family. The report was adopted by a unanimous rising vote.

MEMORIAL ON DEATH OF DR. CARL M. PETERSON

The House of Delegates notes with sorrow the untimely death on Sept. 27, 1955, of Dr. Carl Melancton Peterson, Secretary of the Council on Industrial Health of the American Medical Association. While traveling from a meeting of his Council to a conference in a distant city, Carl Peterson sustained injuries in an airplane accident from which he did not recover.

Carl Peterson had served the American Medical Association diligently and faithfully for 25 years. He had been the Secretary of the Council on Industrial Health since its inception 17 years ago. During these years his untiring efforts in carrying on the work of the Council and the medical profession gained for him an affectionate esteem which men garner when they demonstrate the kind of understanding, professional guidance, and leadership which Carl Peterson possessed. He moved among us in a quiet, unassuming yet confident manner which bespoke faith in his fellow physicians, understanding of the relationship of the physician and his patient, vision in the role of industrial medicine, and unswerving devotion to the fulfillment of those goals to which all of us are dedicated.

In the words of one who knew him well, "The world is a better place because he lived in it."

Messages of Condolence

Dr. R. A. Benson, Washington, informed the House of the recent illness of Dr. Raymond L. Zech, a member of the House of Delegates for a good many years, and moved that the House extend to Dr. Zech its appreciation for the work he has done and encouragement in his recovery. The motion was adopted unanimously.

Dr. Rutherford T. Johnstone, Section on Preventive and Industrial Medicine and Public Health, moved that the House of Delegates stand in silence for one moment in memoriam to Dr. Carl M. Peterson. The House rose in silent response.

Dr. Warren W. Furey, Illinois, for the Council on Constitution and Bylaws, requested the House to take recognition of the unavoidable absence of Dr. Louis A. Buie, Chairman of the Council, by asking the Secretary to send him a fitting telegram. The request was concurred in unanimously.

Dr. Carlton E. Wertz, New York, moved that the Secretary write an appropriate letter to the President of the United States on his recovery, and the motion was unanimously adopted.

Dr. Clarence I. Owen, Michigan, requested by motion that a telegram be sent to Dr. Wyman D. Barrett, a long-time delegate from Michigan, who is ill and unable to attend the Boston meeting. The motion was adopted unanimously.

Telegram from Dr. Wyman D. Barrett

The Speaker read to the House of Delegates the following telegram received from Dr. Wyman D. Barrett:

Many thanks to your officers, yourself, and all the delegates. Extremely sorry unable to be present. Know you will have an excellent meeting.

Reports from Student A. M. A. Delegates

Mr. Hugh Follmer, Student A. M. A. delegate, addressed the House as follows:

Mr. Speaker, Members of the House of Delegates, and Guests: It is indeed an honor to be present for the meeting of the House of Delegates and the meetings of the reference committees. The

representatives from the Student American Medical Association always appreciate being here and enjoy their stay immensely. The last two days we have met many, many of the delegates. We are sorry that we could not meet everybody. We have found in discussions with the different members from the various states that many of them would like to know more about our organization, and because of this we would like briefly to run through some of the work we have done and explain very briefly what our interests are.

Our interests start with premedical education. We have a committee that is studying the question of premedical advisers. The question has arisen as to how good the premedical counseling is for men before they get to medical school, not only as to where to go to medical school and how to get into medical school but also what to take as an undergraduate. This committee is trying to gather information on premedical advising systems in the various states and schools, and we want to make available to all of our local chapters all the information we can on these entrants. We are especially interested in the fact that many, many of the premedical advisers are not M.D.'s; they are Ph.D.'s in chemistry, zoology, and so forth. We feel it is important that premedical students be advised by men who are in the profession themselves and who have better insight into what a man should take as a premedical student.

Our interests also fall into the medical school itself. We are interested in two things. We are interested in how the student finances his way through the medical school, and Mr. Wilson will cover that phase. We are also very interested in the curriculums of medical schools. We, in several of our chapters, have curriculum evaluations, and are gathering information on these evaluations so that this information may be passed out to all of our local chapters so that they may do a curriculum evaluation of their own.

When we speak about a curriculum evaluation, we are not speaking of which course should be in the curriculum and what course should not be in the curriculum. We are not evaluating the professors *per se*. We usually try to put our attention on the little parts course. It is very evident as you go along through medical school that every once in a while there is one course in which there is a great big hole. The professor does not realize it, the curriculum committees and often the students do realize it, and it is only from this that the information can be gained so that the professors can fill up this hole of knowledge. In several schools the professors have been very grateful for such evaluation, and we hope to continue it.

Naturally, being medical students, we are all interested in our internship. The SAMA has had a committee studying for two years the internship in its entirety. On the local level, we carry out a questionnaire program; it is an evaluation. These questionnaires are sent to all of the graduates from the school in the last year. They evaluate their internship very, very thoroughly, and these questionnaires are returned to the local chapter. It is a national program, but the information is not gathered nationally. The information is available to anybody who would care to write any of the local chapters. I know of no questionnaire which will answer more questions for a medical student about any particular internship, and many, many men have used these questionnaires before they start out to visit individual hospitals, and it helps them in selecting which hospitals they will visit. We have studied internships on a national level, the question of what is an internship, and our committee has passed a resolution which wholeheartedly approves the Essentials of an Approved Internship, which is before the House now, but we feel that the internship is a training program and we are encouraging training of the intern.

There has also been the question before our house of delegates, which is only natural I believe, as to the stipend paid interns, and I am sure you are all aware that most interns feel that they are underpaid. I am sure you gentlemen all felt that way when you were interns. We have passed a resolution in our house congratulating any hospital which pays its interns more than $100 a month plus board, room, and laundry, the reason for this being that interns find it is almost impossible to live on less than that amount of money, one of the main reasons for this being that a very high percentage of interns are married. As a matter of fact, the intern who is not married is almost an oddity in this day and age.

We have many, many other interests. One of our primary interests is to educate medical students in the ways of organized medicine. Along this line we have participated in the medicolegal symposiums that were held last month. We were very happy to be invited to this event. We feel that it is not only important but is a part of medical education that is often neglected, and, as I have expressed to many men, I would like to see all SAMA members invited to such things if there is enough room for them. That seems to be the primary problem usually, to get all the students in, but we like to see students come to this type of meeting because we feel they can learn more there than any other place.

Once again I want to thank you for your attention and for the wonderful hospitality.

Mr. Harry Wilson, Student A. M. A. delegate, addressed the House with the following remarks:

Mr. Speaker, Members of the House and Guests: Since last June and our last report to you, one of the fondest hopes of SAMA has become a reality. This has been the establishment of the SAMA Foundation. The Foundation has been created through a trust agreement as a charitable and educational, nonprofit corporation. It is intended that the principal object and purpose of the Foundation shall be to provide financial assistance to medical students. The loan shall be available to any medical student having successfully completed his first year of medical education. There shall be required no co-signers or endorsers or collateral to obtain these loans. There is a very low interest rate scale, which is graded, and the maximum tenure of the loans shall be until six years after the calculated date of graduation. This fund was only initiated after research was done to evaluate the need for such a fund on the national level, and we feel that there is definitely a need for loans to be available to medical students on a national level, and that it is a great advantage to get this on a national level. The local selection committees in each medical school will review loan applications and submit their recommendations to a National Selection Committee for final action.

Our promotion initiating this Foundation will be directed primarily toward the encouragement of the premedical student and the high school student to enter the field of medicine with some knowledge ahead of time about the financial obligations involved. We hope that this Loan Foundation will encourage him to be more secure to enter the study of medicine.

Finally, I do not want to miss this opportunity to reemphasize the importance of the cooperation of the state and county medical societies with your Student American Medical Association chapters in your states. One opinion that has been expressed to us more often while we have been here at this meeting than any other is that many of your members wish that a Student A. M. A. had been in existence when they were going through medical school. I think this is a very important point, and it should not be overlooked. Many of the problems that we feel, just coming into this realm of the American Medical Association and organized medicine, when we see them from an objective viewpoint really, because we are not yet involved in them directly, we realize would have been smoothed out long, long ago if the exposure to organized medicine in the beginning had been more thorough and doctors could evaluate it when they first went into their medical societies at the county and state levels and then finally when they come to be represented here.

Once again, I thank you very, very much for the honor and privilege of being here and having had an opportunity to speak to you at this meeting.

Contribution to American Medical Education Foundation

Dr. George M. Fister, Utah, on behalf of the physicians of the State of Utah, presented to the American Medical Education Foundation checks totaling approximately $11,000.

SUPPLEMENTARY REPORT OF REFERENCE COMMITTEE ON MEDICAL EDUCATION AND HOSPITALS

In the absence of Dr. George M. Fister, Chairman, Dr. Warde B. Allan, Maryland, member of the reference committee, read the following supplementary report, which was adopted:

Through an oversight that was called to your committee's attention, we did not specifically accept the supplementary report R of the Board of Trustees, which requested and recommended that a smaller committee of nine members instead of eleven be composed of two members of the Board, et cetera, and, as a supplementary report of the Reference Committee on Medical Education and Hospitals, the acceptance of this report is recommended.

Retiring Delegates

The Speaker announced that several members of the House of Delegates were voluntarily retiring and would not serve as delegates after this session. He introduced Dr. Karl S. J. Hohlen, Nebraska, a delegate for 17 years who has never missed a meeting; Dr. Bruce Underwood, Kentucky, who is also secretary of the Kentucky State Medical Association; Dr. A. A. Brindley, Ohio; Dr. B. O. Edwards, North Carolina; and Dr. George A. Unfug, Colorado.

Dr. Woodruff L. Crawford, Section on Pediatrics, stated that Dr. Homer M. Izumi, Hawaii, is retiring; Dr. Willis H. Huron, Michigan, brought up the name of Dr. Ralph A. Johnson, Michigan, also voluntarily retiring; and Dr. Grover C. Penberthy, Section on Surgery, General and Abdominal, announced that Dr. Russel V. Lee, Section on Military Medicine, is serving as a delegate for the last time.

The Speaker called on each of the delegates named to stand, and the members of the House expressed appreciation of their services.

Messages of Condolence

Dr. Warren W. Furey, Illinois, by motion, asked that the House of Delegates take recognition of the fact that Dr. Vincent W. Archer, Virginia, was unavoidably absent from this session because of ill health, and express wishes for his speedy recovery. Dr. Furey's motion was adopted unanimously.

Dr. Laurence S. Nelson Sr., Kansas, moved that a message be sent to the widow of Dr. John Porter, a delegate from Kansas for a considerable number of years, who died early in September. This motion also was unanimously adopted.

Report of Reference Committee on Rules and Order of Business

Dr. B. O. Edwards, Chairman, North Carolina, presented the following report, which was adopted:

Mr. Speaker and Members of the House of Delegates: On behalf of the Reference Committee on Rules and Order of Business, I am pleased to offer the following resolution:

Resolved, That this House of Delegates hereby expresses its profound appreciation for all that has been done to make the meeting we are about to conclude so very pleasant and successful.

To this end, acknowledgement is made of our gratitude to Dr. Frank P. Foster, General Chairman of the Local Committee on Arrangements, his Co-Chairman, Dr. Laurence B. Ellis, and the members of their committee, as well as the representatives of the other New England states who worked with them; to the Secretary, Dr. George F. Lull, and his capable staff for the efficiency and dispatch with which they performed their tasks; to the Massachusetts Auxiliary for its efforts in entertaining our ladies and ourselves; to the Aces and Deuces for their gracious invitation to luncheon on Tuesday; to the six New England state medical societies for their long-to-be-remembered Down-East hospitality at cocktails and dinner yesterday; to the management and staff of the Statler Hotel; to our Speaker and Vice Speaker for their smooth and impartial manner in discharging a complex and difficult assignment; and to all those less obvious but nevertheless extremely important groups and individuals whose anonymous contributions are so vital in providing the myriad details which go to make up an undertaking of this magnitude.

Statement of Dr. Bruce Underwood

Dr. Bruce Underwood, Kentucky, was granted the floor on the point of personal privilege, and addressed the House as follows:

Mr. Speaker and Members of the House of Delegates: I asked for this point of personal privilege because this is my last session in the House of Delegates. I hope that I can continue to attend the meetings, but this is my last time as a delegate. I have a feeling of deep regret for what, to me, is a deep personal loss, for I have come to appreciate and to love the members of this House and the officers and trustees, who are also members, and those who work with the House.

During this session, for some reason or other, I have thought a good deal about my own father, who was a Doctor of Medicine. His death was not entirely unexpected, but the friend who broke the news to me told me that he had been through the same experience where his father's death was not entirely unexpected, and he told me that in spite of that it was still hard to take. I have heard others stand up here and speak to this House and say goodbye and thank you, and I believe I have a better understanding now of what they went through.

I have appreciated the privilege of serving in this House and the many kindnesses you have shown to me individually. I consider serving in this House of Delegates the second highest privilege I have ever had in my life. For at least a portion of the time that I served in this House, I was the youngest delegate in the House, and, as a relatively young man, to have older men as leaders and officers of this Association be so friendly and so kind was something that I cherished. However, I feel like I am getting older. I am now a past head of some organizations, the past chairman of the Aces and Deuces, and pretty soon I shall be a past delegate of the American Medical Association. Just before I came to this meeting, someone told me a definition of an old man. He said it is somebody that is fifteen years older than you are. Some of you think that I am not even dry behind the ears yet. My own boy, twelve years old, thinks I am an old fogey belonging to what he calls the 18th Century, not the 19th Century, and he has told me so in no uncertain terms. The fact of the matter is, he had a little fever recently, and I prescribed half of a 5-grain aspirin tablet for him. He spoke to his mother with some doubt as to whether he would take it, because he thought I practiced medicine like they did in the old days. I suppose that makes me middle-aged. There are many things that I would like to say to you. This isn't the time nor the place. I have spoken to the Board of Trustees about some of them, and I want to mention them just briefly.

Doctors of Medicine were primarily responsible for the establishment of State Boards of Health in this country and for health departments. I am told that Dr. J. N. McCormack of Kentucky had a great deal to do with the early organization, the writing of the original Constitution and Bylaws of the American Medical Association. Five years ago when I began as a delegate, there were five or six members of this House who were engaged in the full-time practice of public health. One of the most outstanding was a man who was kind enough to adopt me as his nephew, and I have been calling him "Uncle Felix" ever since, and that is Dr. Felix A. Underwood, of Mississippi. I don't believe at the present time that there is any delegate from any state or territory who is engaged in the full-time practice of public health. I believe that is a fact that ought to be mentioned.

In closing, I would like one additional personal word, and I assure you it takes some degree of courage to say it, and I hope you accept it in the spirit in which it is offered. The highest privilege I have ever had in my life is to know the one whom I believe to be the Author of the Bible. The Bible, in both the Old and New Testaments, teaches that "All flesh is as grass, and all the glory of man as the flower of grass. The grass withereth, and the flower thereof falleth away, but the word of the Lord endureth forever." The Bible clearly implies that this life, so far as I am concerned, is like a drop of water in an ocean of eternity. If you know the Author of the Bible, I hope you will come to know Him better. If you do not know the Author of the Bible, I hope you will meet Him. In either event, between now and Christmas, I would urge that you read some portion of the book He wrote every day. If the Bible is right, and I believe it is, and if I love and appreciate you, and I do, I could do no less than hope that in the life to come you and I will be in heaven together, and so I say thank you and goodbye as a delegate.

The House adjourned *sine die* at 2:45 p. m., Thursday, Dec. 1, 1955.

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COUNCIL ON MEDICAL SERVICE

A STUDY OF MATERNAL MORTALITY COMMITTEES

This is part 1 of a new series of articles by the Committee on Maternal and Child Care of the Council on Medical Service reviewing the organization and operation of maternal mortality study committees. The purpose of this specific study is to obtain information that may be utilized in the preparation of guides that in turn may be helpful in the development and operation of maternal mortality committees in other areas in the United States. The descriptive material to follow is concerned with the Minnesota Maternal Mortality Committee, a subcommittee of the Maternal Health Committee of the Minnesota State Medical Association.

MINNESOTA MATERNAL MORTALITY COMMITTEE STUDY

History.—The Maternal Welfare Committee of the state association in 1940 voted to recommend to the association that it request the Minnesota Department of Health to cooperate in a statewide study of maternal mortality. The following year the house of delegates officially approved such a study to be conducted under the direction of the committee in cooperation with the Minnesota Department of Health. The study began July 1, 1941, but due to lack of personnel during the war was discontinued June 30, 1942. It was resumed in 1950 and is now in its sixth consecutive year.

The essential purpose of the maternal mortality study is to provide the medical profession of Minnesota with information useful in protecting the life and health of mothers. The committee seeks to determine actual causes of maternal deaths, to classify them, to study them, and to draw conclusions that will point the way to continued reduction in maternal mortality. The committee members are selected by the Maternal Health Committee of the state medical association and are appointed by the council of the association. They serve without remuneration. The committee originally had 6 members but now has 12; 11 are obstetricians representing all areas of the state; the 12th member is the chief of the Section of Maternal and Child Health of the State Department of Health and serves as secretary. The members serve until they wish to retire; the permanent chairman is chosen by the council; and three obstetrician-investigators are employed to travel over the state to collect and study data on maternal deaths. These data are presented to the committee members who then decide on the various aspects of the maternal deaths.

Scope of Study.—The study includes all women who die during pregnancy or within the three month postpartum period, regardless of the actual cause of death. A maternal death is defined as any death associated with pregnancy (including abortion and extrauterine pregnancy) or the puerperium (for a period of three months postpartum), whether or not some pathology of pregnancy is the actual cause of death. An obstetric death is defined as one ascribed to pregnancy, childbirth, or the puerperium for a three month period as listed in chapter 11 of the Manual of the International List of Diseases, Injuries and Causes of Death but also includes chorioepithelioma regardless of the interval following pregnancy. In addition, obstetric deaths also include such associated causes as criminal abortion, anesthesia, improper obstetric care and treatment, certain heart diseases, and certain infections. The diseases of the heart (e. g., rheumatic heart disease as contrasted to coronary thrombosis) must be aggravated by pregnancy in order that a case be classified under the heading of obstetric death. The committee studies all maternal mortality cases occurring in the state and those in which patients were treated just outside of the state by Minnesota physicians. However, in the compilation of statistics, both the committee and the state health department include only those cases in which patients were residents of Minnesota.

Financing.—The state health department provides for the expense of the study. In 1954 the budget was $6,000. The obstetrician-investigators are paid $50 per day for not more than 100 days for all services performed within a year's time. In addition, clerical help is supplied by the Section of Maternal and Child Health, Minnesota Department of Health, with special clerical help provided also by the Minnesota State Medical Association.

Operation—Agencies and Personnel Involved.—The state medical society and the state department of health jointly conduct the study program with the cooperation of the state university hospital and the state hospital association. Maternal death certificates are received by the Section of Vital Statistics of the Minnesota Department of Health and photostat copies are prepared and forwarded to the Section of Maternal and Child Health. Because this routine procedure allowed considerable delay between the death of the patient and the investigation by the committee, the state department of health enacted the following regulation: "Any death associated with pregnancy (including abortion and extrauterine pregnancy), or the puerperium (for a period of three months postpartum), whether or not it is the actual cause of death, shall be reported by mail within 3 days after death to the Minnesota Department of Health, Section of Maternal and Child Health, by the attending physician and by the hospital where the death occurred." This insures prompt investigation before important details of the case may have been forgotten. In addition, since deaths occurring during the postpartum period frequently do not mention pregnancy on the death certificate, a cross matching of all female deaths of persons aged 15 through 45 with all births in the preceding three months will show additional deaths associated with pregnancy or the puerperium. Other cases are occasionally discovered through the newspapers and reports from nurses and other hospital personnel.

As soon as possible after a maternal death is reported, one of the obstetrician-investigators visits the attending

Committee members are W. L. Crawford, M.D., chairman, Rockford, Ill.; R. B. Chrisman Jr., M.D., Coral Gables, Fla.; Philip S. Barba, M.D., Philadelphia; Harold S. Morgan, M.D., Lincoln, Neb.; J. L. Reichert, M.D., Chicago; Garland D. Murphy, M.D., El Dorado, Ark.; Howard A. Nelson, M.D., Greenwood, Miss.; and Donald A. Dukelow, M.D., consultant, Chicago.

physician, obtains the history, and discusses various aspects of the death. He visits the hospital, reviews the records, and talks with hospital personnel who came in contact with the patient. The consultant, if one had been called in, is also interviewed. If necessary the investigator may even get additional information from the relatives through the attending physician. All the data gathered are directed toward completion of the mortality study questionnaire. The obstetrician-investigator strives to be entirely objective and impersonal in his questioning and makes no comment or criticism of the handling of the case since that is the function of the committee. When he thinks it advisable, he obtains x-rays and pathological material for review by the committee. His next step is to formally put together and summarize the data after critically considering them for accuracy, completeness, and comparison of the cause of death as noted on the death certificate. In preparing his summary, the investigator may consult with nonobstetric specialists concerning the importance of complications on the course of the case. His case summary may be discussed with the chief of the department of obstetrics and gynecology of the University Hospital before it is submitted to the committee.

Data are kept confidential by means of a questionnaire with a detachable identifying sheet. This sheet contains information identifying and describing the mother, physician, consultants, pathologists, involved hospital personnel, and the infant. The detached sheet and minutes of committee meetings that contain records of committee discussions and decisions are preserved and filed by the chief of the Section of Maternal and Child Health, Minnesota Department of Health, at the request of the committee members. The original questionnaire (anonymous) is used by the department of obstetrics and gynecology of the University Hospital for teaching purposes.

The investigator presents the case summary, identifiable only by case number and the year, at the regular meeting of the committee. These committee meetings are called about every three months and usually last all day. They are closed to all except committee members, although exceptions have been made for occasional visiting obstetricians. The committee as a whole makes all final decisions. The cause of death is determined. The management of the case is critically evaluated as to adequacy of medical care during the three phases: (1) prenatal, (2) labor and delivery, and (3) puerperium. The committee makes final assessment as to the preventability of the death and the responsibility for the death; it passes on the adequacy of the autopsy and the completeness and accuracy of the death and birth certificates. After full deliberation, the committee may charge responsibility for the death to the physician, hospital, patient, disease, or any combination of these factors. Since cases are presented anonymously, free discussion and unbiased conclusions are possible.

Follow-Up and Disposition of Cases.—Copies of the case summary, including criticism of the handling of the case and the conclusions of the committee, are mailed to the responsible physician and to any involved consultant. Accompanying this material is a letter from the chairman that states his authority from the state medical society for sending the summary, notes the anonymous methods by which cases are reviewed, and invites constructive comment in furthering the work of the committee.

At the end of each 12 month period, the investigators and members of the department of obstetrics and gynecology of the University Hospital prepare a report on the year's study together with their conclusions. This report is reviewed individually by members of the study committee and is modified or approved by them as a committee before it is published as their report in the official journal of the state medical society. Reprints of the report are mailed to all members of the state society by the state department of health. From time to time editorials concerning the study are prepared and published. Papers on various phases of the study have been prepared by investigators and individual members of the committee and have been published. The obstetrician-investigators have correlated data from the study by preparing lantern slides and use these in talks to local medical societies and to hospital groups. On two occasions, the committee as a whole has appeared on local medical society programs presenting a typical case review with discussion and vote as to the final disposition of the case. The yearly reports of the study are consulted in selecting obstetric subjects for presentation at the annual sessions of the state medical association in the form of round tables, symposiums, and formal addresses. In these and other ways, members of the state medical association have been familiarized with the methods and findings of the study committee.

TABLE 1.—*Causes of Obstetric Deaths and Percentage Distribution of Deaths Considered Preventable in 1950, 1951, and 1952* *

Cause	Cases		Preventable Deaths	
	No.	%	No.	%
Hemorrhage	33	28.0	25	44.6
Toxemia	23	19.5	8	14.3
Infection	8	6.8	3	5.4
Anesthesia	7	5.9	6	10.7
Pulmonary embolism	7	5.9	0.0	0.0
Others	40	33.9	14	25.0
Total	118	100.0	56	100.0

* Minnesota Maternal Mortality Study by the Maternal Mortality Committee of the Committee on Maternal Health, Minnesota State Medical Association, table 16, Minnesota Med. **38**: 14 (Jan.) 1955.

Results—Statistical Analysis.—The Minnesota maternal mortality rate was 1.68 per 1,000 live births in 1941 when the study was first conducted, whereas the United States rate was 3.2. In 1950, when the maternal study was again resumed, the rate was 0.59 per 1,000 live births and declined to 0.42 per 1,000 live births in 1952; the United States rate was 0.83 in 1950 and 0.68 in 1952. In 1953 the rate was 0.40 and provisional statistics on "obstetric" deaths for 1954 indicate a rate of 0.4 per 1,000 live births with 80,620 live births recorded (99.8% delivered by physician and 99.1% in hospitals). Table 1 shows causes of obstetric deaths and percentage distribution of total deaths considered preventable for the three year period, 1950 through 1952. An analysis of the cause of obstetric deaths shows that hemorrhage accounted for 28% of the total and almost one-half of the obstetric deaths that were considered preventable.

Hemorrhage accounted for more than three times as many preventable deaths as the next leading cause, toxemia. Some of the factors involved in the deaths due to hemorrhage include accouchement forcé, improper use of pituitary extracts during labor, and inadequate and delayed replacement of blood.

In recent years there has been a decreasing ratio of obstetric deaths in Minnesota (table 2) to deaths associated with pregnancy, but not directly due to pregnancy. Table 2 gives the actual number and percentage of obstetric and nonobstetric deaths for the years that data are available. The final maternal mortality rate is calculated on those maternal deaths classified as due to obstetric causes.

Analysis of table 3 shows a remarkable reduction in the proportion of preventable deaths since 1941. Only 25.4% of the maternal deaths studied were classified as preventable in 1953 in contrast to 73.2% in 1941, even though there were 30% more deliveries in 1953. Table 4 shows that the 15 preventable maternal deaths are from the 32 deaths classified as due to obstetric causes. Table 4 also lists the primary causes of these obstetric deaths indicating the assignment of responsibility if they were considered preventable. It is indeed significant that in 1953 hemorrhage was the cause of only 4 maternal deaths in Minnesota in contrast to 33 deaths from this cause during the previous three years.

Conclusion.—In Minnesota, the maternal mortality rates have shown a continuous and significant decrease during the past years. This continued reduction is due not to any one factor but includes better undergraduate training of physicians, increasing postgraduate and refresher courses in obstetrics, increasing percentage of babies born in modern hospitals, widespread use of chemotherapeutic agents, and early and adequate blood replacement. In addition, the maternal mortality study program for the education of physicians and hospital personnel, as well as public health measures, such as education of the public in the importance of early and adequate prenatal and obstetric care, are other important factors in the reduction of maternal mortality. During the course of the committee's studies, there was demonstrated the need for the improvement of inservice training, particularly in laboratory, x-ray, medical records, and anesthesia services. As a result, refresher training courses have been held at various key locations throughout the state; extension courses for laboratory aides and x-ray technicians are being conducted at the University of Minnesota, and there is an intensified recruitment program by all disciplines concerned. These activities should ultimately improve services available to the patient.

The following minimum requirements for adequate obstetric care have been adopted by the Minnesota Maternal Mortality Committee and published with the 1950 report in *Minnesota Medicine*.[1]

First prenatal visit

1. Adequate history and general physical examination with accurate follow-up of any abnormality revealed by these.
2. Pelvic mensuration to include intertuberous diameter, diagonal conjugate and palpation of sacrum and spines.
3. Laboratory workup—blood serology for syphilis, hemoglobin, urinalysis and Rh determination.

Routine prenatal visits

1. Blood pressure determination.
2. Urinalysis, especially for albumin.
3. Weight determination.
4. Abdominal palpation during last two months of gestation.
5. Reasonably adequate study of abnormalities presenting themselves during these visits.

Labor and delivery

1. Adequate use of generally recognized obstetric procedures.
2. Observance of adequate asepsis.

Postpartum Care

1. Reasonable promptness in the recognition of abnormalities.
2. Reasonable promptness in the institution of adequate treatment.

Postmortem examination

1. Completeness in itself or as an adjunct to clinical observation.

Death certificate

1. Accuracy in assignment of cause of death.
2. Completeness of data requested.

Birth or Stillbirth certificate

1. Completeness in reporting desired data.
2. Accuracy of data.

TABLE 2.—*Maternal Deaths Classified as Obstetric and Nonobstetric in 1941 and 1950-1953*

	1941		1950		1951		1952		1953	
	No.	%	No.	%	No.	%	No.	%	No.	%
Obstetric deaths	98	83	46	67.6	39	68.4	33	56.9	32	55.3
Nonobstetric deaths	19	17	22	32.4	18	31.6	25 *	43.1	27 †	45.7

* Bulbar poliomyelitis, 11; trauma, 4; intracranial hemorrhage, 3; brain tumor, 2; leukemia, 1; suicide, 1; obstruction trachea, 1; acute glomerulonephritis, 1; thrombocytopenic purpura, 1.
† Bulbar poliomyelitis, 6; intracranial hemorrhage, 4; neoplasms, 4; peritonitis, 4; trauma, 4; unknown, 3; meningitis, 1; lupus erythematosus, 1.

TABLE 3.—*Preventability of Maternal Deaths in Minnesota in 1941 and 1950-1953*

	1941		1950		1951		1952		1953	
	No.	%	No.	%	No.	%	No.	%	No.	%
Preventable	82	73.2	22	32.4	24	42.1	10	17.2	15	25.4
Nonpreventable	27	24.1	45	66.1	32	56.1	47	81.0	44	74.6
Not determinable	3	2.7	1	1.5	1	1.8	1	1.7	0	....

1. Minnesota Maternal Mortality Study by the Maternal Mortality Committee of the Committee on Maternal Health of the Minnesota State Medical Association, Minnesota Med. 36: 609 (June) 1953.

Death certificate of child

1. Accuracy in assignment of cause of death.
2. Completeness of requested data.

Through their publications the committee constantly stresses the importance of autopsies. Since many autopsies have not been done in the past because a pathologist was not available, the committee has arranged with the state department of health that a pathologist be employed when necessary. A physician in any part of the state need only notify the state health department that approval for an autopsy has been granted. A pathologist will be procured to do the job.

The efforts of the committee's study have stimulated the establishment of a maternal mortality committee and a neonatal mortality committee in Virginia and in an area in the western part of the state. Duluth has recently established a maternal mortality committee. The Hennepin County Neonatal Mortality Study Committee of the Hennepin County Medical Society was established in 1952.

TABLE 4.—*Primary Causes of Maternal Deaths Classified as Obstetric in 1953, Showing Preventability and Assignment of Responsibility*

Cause	Total	Non-preventable	Preventable		
			Physician	Patient	Other
Toxemia	8	4	3	1	..
Hemorrhage	4	..	4	..	..
Infection	3	1	1	..	1 (abortionist)
Anesthesia	1	1	..	..	..
Transfusion accidents	4	1	..	..	3 (2—laboratory 1—hospital)
Heart disease	4	4	..	..	..
Suicide	2	2	..	..	..
Pulmonary embolism	2	2	..	..	..
Amniotic fluid embolism	1	1	..	..	..
Pituitrin shock	1	..	1	..	..
Acute pulmonary edema	1	1	..	..	..
Diabetic acidosis	1	..	1	..	..
Total	32	17	10	1	4

It is anticipated that similar study committees will be formed in other large communities of Minnesota and that eventually the whole state will participate in perinatal mortality studies as well as maternal. Relatively few adverse situations have arisen in connection with the committee studies. After careful explanation of the purpose of the committee, the physicians concerned have generally been quite willing to cooperate in subsequent committee investigations.

Since its inception the work of the maternal mortality committee has been in the nature of professional self-criticism of a constructive type with benevolent and life-saving objectives. But it was apparent that if some information or records of the committee were to be made public, it was conceivable that a physician could be subjected to embarrassment or even to a malpractice suit based on his handling of a case. Hence it is desirable and essential to the success of the maternal mortality study program that physicians be allowed to cooperate voluntarily and completely without fear or threat of legal action based on admissions and revelations of the doctor in his willingness to aid research and further technical knowledge in this field. The 1954 Minnesota rate of 0.4 maternal deaths per 1,000 live births was very low, one of the lowest in the United States. It was felt that the rate could be reduced even more if maternal mortality studies could be continued on an open, yet protected, plane. A similar situation had occurred in regard to confidential information to be received from physicians for a cancer research study. The need for such confidential information was deemed so serious that in 1949 the legislature enacted a bill that authorized the state board of health to establish a cancer statistical research service and declared that such cancer reports as those filed with the state board of health were to be confidential, and unauthorized disclosure of any information in such records was made a misdemeanor. Therefore, in view of this precedent, an act, which pertained to research studies conducted by the state department of health and other agencies and which provided for the confidential character of such research studies, was presented to the 1955 session of the state legislature and enacted into law. This bill provides that such research studies as the state department of health may undertake are in a preferred status in regard to the treatment of its records. The bill provides that such information "shall not be admissible as evidence in any action of any kind in any court or before any tribunal, board, agency or person." Also, it provides that information on the nature and course of the studies and the results obtained therefrom may be published, but names or identifying data cannot. It in no way closes off from view information or sources thereof—it merely provides that data procured by the state department of health in connection with these studies cannot be used as a source of evidentiary facts. This bill was made general and broad so that it would be unnecessary for the state board of health to go to the legislature with new problems that might arise from studies instituted in ensuing years.

Maternal mortality studies have had a desirable psychological effect on physicians and hospital personnel as well as on the public. Physicians have become more careful, more conservative in their treatment, and request consultation earlier. Individual physicians have had honest errors pointed up, and there is every reason to believe that these will not be repeated by the person concerned. The results of these studies are used for the education and guidance of physicians at hospital staff meetings, at county medical society meetings, and at refresher courses; for undergraduate teaching at the medical school; and for publication in medical journals. The studies have supplied information that has changed the emphasis of both undergraduate and postgraduate teaching. As a result of these studies even further reduction in maternal mortality is expected.

Jaundice in Cardiac Patients.—Jaundice in cardiac patients does not occur without infarction. It can occur secondarily to cardiac cirrhosis or necrosis of the hepatic cells. Since jaundice can be overlooked in a cyanotic patient, it is important to determine the serum bilirubin in any suspect case. Another difficulty . . . is that jaundice does not appear in the skin over areas where edema is present. Once jaundice is recognized in a cardiac patient, it is extremely important to have good proof of an embolus before instituting anticoagulant therapy.—J. G. Parker, M.D., and L. Felder, M.D., Jaundice in Cardiac Failure Without Infarction, *Annals of Internal Medicine*, November, 1955.

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PUBLIC RELATIONS

Doctors Honor Local Newsmen

Too often in this world the good things are taken for granted while the things we do not like get a disproportionate share of attention. This is sometimes the case where medical newswriters are concerned. To reverse this situation, many medical societies honor newsmen for excellence in medical reporting and writing.

Most recent example of this practice comes from Phoenix, Ariz. At the third annual awards dinner of the Maricopa County Medical Society, a popular Phoenix science writer, Julian DeVries, was presented an honorary associate membership in the society and a gold-plated stethoscope. DeVries, who writes for the Phoenix *Gazette* and the Arizona *Republic,* received the awards for "his effective contribution to better understanding of the medical profession through his newspaper column, news articles, and his television program, 'M.D.'s Notebook.' " This is the second award given DeVries by the society. His first, "for distinguished public service," was presented in 1953. Two other newspapermen, one from the Phoenix *Gazette* and the other from the Arizona *Republic,* also were given awards for specific stories they had written on health problems. It was the doctors' way of saying, "Thank you for a job well done."

Good press relations must be an integral part of every medical society public relations effort. Good press relations can only result when both physicians and newsmen reach a mutual understanding about their respective responsibilities where medical news is concerned. Medical societies have taken a long step in the right direction in recent years by holding medical-press dinners at which doctors and newsmen can get acquainted and talk over problems. Out of such cooperative meetings have come many formal and informal press codes of cooperation to guide both medical men and writers in handling medical stories. Awards to the men at the local level, like those given in Phoenix recently, are just one more way to build medical-press cooperation, for they are concrete indications that physicians appreciate the day-to-day services of the men who actually cover the local medical beat.

Can Your Assistant Keep a Secret?

Physicians, well indoctrinated with the Principles of Medical Ethics, know there can be no compromise with medical confidences. Any confidential information received by the doctor from a patient must remain inviolate. His office assistant may not, however, be as aware of the importance of respecting medical confidences. The doctor himself must familiarize her with those aspects of medical ethics that apply in her daily work. Careless breaches of medical ethics in this area create not only public relations problems but legal ones as well.

The physician can emphasize the importance of keeping secret information that pertains to patients by calling his assistant's attention to the section in the Principles of Ethics that says: "Patience and delicacy should characterize the physician. Confidences concerning individual domestic life entrusted by patients to a physician and defects in the disposition or character of patients observed during medical attendance should never be revealed unless . . . required by the laws of the state."

Public relations and legal aspects intermingle when a curious patient, for example, asks the doctor or assistant personal questions about other patients. Without giving offense, those in the office must firmly refuse to provide such information. A tactful, courteous refusal will discourage further questioning. Confidential papers, case histories, and even the appointment book should be kept out of reach of curious eyes—to protect the patient as well as the doctor and his aides. The doctor-patient relationship is of such stature that every action of the physician and his aides should be devoted to enhancing it. This is the actual aim of nearly every medical public relations effort.

PRoblem Corner

"Medical care costs too much." Every physician hears this complaint, directly or indirectly, from his patients, his neighbors, or others in his community from time to time. What can he as an individual physician do to combat such criticism? Misunderstanding between the doctor and his patient in regard to medical expenses creates a real public relations problem. One study recently showed that, though many persons felt the cost of medical care was high in relation to the services received, none had a crystallized idea of what they should be getting. Naturally, people are reluctant to pay for medical and hospital care. They did not ask to be sick. They are forced into paying for an unwanted service. Furthermore, once a patient is well, his gratitude for medical services wanes rapidly. As long as human nature continues to operate in the traditional fashion, patients probably will continue to say about doctors: "After all, all he did was make me well!"

A better understanding of medical and hospital services and their cost is obviously necessary. The plaque that the A. M. A. sells to physicians to encourage advance fee discussions is one technique for achieving this understanding. The newest A. M. A. leaflet, "To All My Patients," which is being provided in quantity to A. M. A. members, is designed to help physicians explain various aspects of medical care and its costs. The individual physician himself must share in the responsibility of organized medicine for pointing out to individuals that, actually, medical costs have not risen as fast or as high as other consumer costs. In reality, the patient gets more for his medical care dollar today than ever before because of improved medical techniques, new medicines, and treatments that cut illness time considerably.

But how many patients know that the physician's share of the medical care dollar is constantly dwindling? In 1929 he received 33 cents of each medical dollar; today he gets only 28 cents. The dentists' share, too, has shrunk from 16 cents to 10 cents. The hospital's share of the medical care dollar, however, has jumped from 14 cents in 1929 to 26 cents in 1954. Other medical expenses that took 17 cents in 1929 take about 20 cents today. It is up to the individual physician not only to help tell this story but also to encourage his patients to consider medical expenditures as investments in good health and a longer, more productive life.

MEDICAL NEWS

ALABAMA

Reopen Physical Therapy Unit.—The physical therapy unit of the University of Alabama Medical Center is scheduled to reopen about Jan. 1, 1956. The facility, located in University Hospital, has been closed since 1951. Among the agencies cooperating with University Hospital to reactivate the unit are the local chapter of the Alabama Society of Crippled Children and Adults, the Multiple Sclerosis Society, the State Vocational Rehabilitation Service, the Muscular Dystrophy Association, United Mine Workers Welfare and Retirement Fund, the Institute for the Handicapped, and the National Foundation for Infantile Paralysis.

University News.—The Medical College of Alabama, Birmingham, announces that Dr. James Garland Wood, assistant professor and acting chairman of the department of radiology, has been promoted to associate professor. Dr. Louis S. Graham has been appointed associate professor of pathology; Dr. William Nicholson Jones, professor and acting chairman, department of obstetrics and gynecology; Dr. Frank S. Moody, chairman, department of otolaryngology (voluntary basis); Dr. Josiah C. Carmichael, associate professor and chief, obstetrics section, obstetrics and gynecology; Dr. Waldo Philip Hitchcock, associate professor of anesthesiology; Dr. E. Edward Evans, associate professor of microbiology; Drs. Irwin Schoen, Robert E. Roth, and Harold Schneider, assistant professors of pathology; Dr. Jolyon S. Tucker, assistant professor of clinical neurology, psychiatry, and neurology; Dr. Thomas Joseph Reeves, associate professor of medicine; and Dr. James N. Sussex, associate professor of psychiatry.——Dr. Melson Barfield-Carter, professor and chairman of the department of radiology since 1945, retired Aug. 1, as did Dr. James R. Garber, professor of obstetrics and chairman of the department of obstetrics since 1945.

CALIFORNIA

Hospital News.—The second term (academic year 1955-1956) of the training course for personnel concerned with the care of cerebral palsied children will begin at Children's Hospital in San Francisco Feb. 1. This will be the second year of this training program supported by the United Cerebral Palsy Association in this hospital. For information, write to: Dr. Luigi Luzzatti, Children's Hospital, 3700 California St., San Francisco.

Psychiatric Case Seminar.—Open to qualified practicing psychiatrists, an advanced psychiatric case seminar will meet on Wednesdays, 8-10 p. m., Feb. 1-March 21, 1956, in room 108, Old Religious Conference Building at the University of California at Los Angeles. Requests for information should be made to Dr. Thomas H. Sternberg, Assistant Dean for Postgraduate Medical Education, University of California Medical Center, Los Angeles 24. The fee for the course, which is limited to 20 students, is $60.

Course in Pathological Physiology.—The University of California Extension, Los Angeles, will open to graduates of approved medical schools a course in pathological physiology (fee, $50), which will meet Mondays, 7:30-9:30 p. m., beginning Jan. 30, 1956, in room 12-096 of the university's medical center. The course is designed to aid practicing physicians in understanding and applying to their clinical problems certain relatively recent physiological concepts concerning the pathogenesis of disease. The effects of therapeutic procedures, particularly as they cast light on the physiological processes under discussion, will also be considered, according to Dr. Victor E. Hall, chairman. Requests for information should be made to Dr. Thomas H. Sternberg, Assistant Dean for Postgraduate Medical Education, University of California Medical Center, Los Angeles 24.

Physicians are invited to send to this department items of news of general interest, for example, those relating to society activities, new hospitals, education, and public health. Programs should be received at least three weeks before the date of meeting.

CONNECTICUT

University News.—Dr. Aaron B. Lerner, since 1952 associate professor of dermatology at the University of Oregon Medical School, Portland, has been appointed to the same position at the Yale University School of Medicine, New Haven, where he will also serve as head of the section of dermatology. Dr. Lerner was assistant professor of dermatology at the University of Michigan Medical School, Ann Arbor, from 1949 to 1952. ——Dr. Harold M. Frost Jr., Buffalo, has been named assistant professor of orthopedic surgery at the Yale University School of Medicine.

Lectures on Medical Economics.—Dr. Creighton Barker will serve as moderator for the session on state license and specialty boards, presented by the Connecticut State Medical Society and the department of public health, Yale University School of Medicine in Brady Auditorium (310 Cedar St., New Haven) on Jan. 5, 4 p. m. "The State License" will be discussed by Dr. Louis P. Hastings, Hartford, member, Connecticut Medical Examining Board; "National Board of Medical Examiners," by Dr. John P. Hubbard, Philadelphia, executive secretary, National Board of Medical Examiners; and "Specialty Boards" by Dr. Courtney C. Bishop, Yale University School of Medicine, New Haven.

DELAWARE

State Medical Election.—Newly elected officers of the Medical Society of the State of Delaware include: Dr. Glenn W. M. Van Valkenburgh, Georgetown, president; Dr. Roger Murray, Wilmington, president-elect; Dr. John B. Baker, Milford, vice-president; Dr. Norman L. Cannon, Wilmington, secretary; and Dr. Charles Levy, Wilmington, treasurer.

DISTRICT OF COLUMBIA

Physicians Honored by Cuba.—On Dec. 3 President Fulgencio Batista of Cuba bestowed the Order of Merit of Carlos Finlay on Dr. Francis M. Forster, dean, Georgetown University School of Medicine and professor of neurology, and Dr. Felipe A. Martinez, associate professor of anatomy. Dr. Forster has lectured at a number of hospitals in Cuba and served last summer as a visiting professor of neurology at the University of Havana Faculty of Medicine and Pharmacy. Dr. Martinez, a native of Cuba and an alumnus of the Georgetown medical school in Washington, D. C., was cited for his 10 years' work in anatomy at the university and for his devotion to Pan-American medicine.

Personal.—Dr. W. Montague Cobb, head, department of anatomy, Howard University College of Medicine, Washington, D. C., has been awarded the honorary degree of doctor of science by his alma mater, Amherst (Mass.) College. He was cited as a "teacher, scholar, scientist, and physician." Dr. Cobb has contributed to medical literature on such subjects as the effects of aging on the human skeleton, graphic techniques of teaching anatomy, and the physical anthropology of the American Negro.——Dr. Fred L. Soper, Washington, D. C., director, Pan American Sanitary Bureau, Regional Office of the World Health Organization, was awarded an honorary degree by Jefferson Medical College of Philadelphia on Sept. 23. The citation noted that "as director of the Pan American Sanitary Bureau, Dr. Soper has used his enormous administrative talents toward coordinated effort in the Americas in the field of public health."

FLORIDA

Hospital News.—The dean's committee of the Veterans Administration Hospital of Coral Gables has been reconstituted to consist of Homer F. March, Ph.D., dean of the University of Miami School of Medicine, Coral Gables, as chairman, and Drs. John J. Farrell, Ralph Jones, and William A. D. Anderson,

chairmen of the school's departments of surgery, medicine, and pathology, respectively, as members. Dr. Edward F. Zimmerman, chief, professional services of the hospital, was designated as the manager's representative to the committee.

Cardiac Work Classification Unit.—The Heart Association of Greater Miami announces the opening of a cardiac work classification unit at Jackson Memorial Hospital, Miami, as part of the community service program of the association. The purpose of the unit is to evaluate the ability of the individual with heart disease to work at gainful employment. Patients referred to the unit will receive a complete examination to establish the cardiac diagnosis and degree of work ability. The problems of each patient are considered in conference by the entire group, and specific recommendations are made to the referring physician. The unit does not function as a diagnostic clinic nor does it prescribe treatment. Patients may be referred to the unit only by physicians. There is no charge for the service. Information may be obtained by calling the Heart Association of Greater Miami, telephone 2-3337.

GEORGIA

Personal.—Dr. Jesse C. Dover, Clayton, who has served in Rabun County for over 50 years, was honored Aug. 26 with a "Dr. Dover Birthday Party." About 300 people attended the party, which celebrated his 80th birthday. The program included a skit in which various events in the doctor's life were acted out. Dr. and Mrs. Dover were presented with a silver tea service.

Name Chief of Ophthalmology.—Dr. John R. Fair has been appointed assistant professor of surgery and chief of ophthalmology at the Medical College of Georgia, Augusta. Dr. Fair, who was formerly assistant director of the Ocular Research Unit, Walter Reed Army Medical Center, Washington, D. C., in 1954 served as chief of the eye section of the Army's 98th General Hospital in Germany, a post from which he resigned with the rank of Lieutenant Colonel.

ILLINOIS

Psychiatric Lecture.—Dr. Franklin G. Ebaugh, clinical professor of psychiatry, University of Colorado School of Medicine, Denver, will present "The Management of the Depressed Patient" Jan. 4, 1956, 8 p. m., at the North Shore Health Resort, 225 Sheridan Rd., Winnetka. All physicians are cordially invited.

Chicago

Multiple Sclerosis Clinic.—The Chicago chapter, National Multiple Sclerosis Society (53 W. Jackson Blvd.), announces the recent opening of a clinic for multiple sclerosis patients at St. Luke's Hospital, under the direction of Dr. Roland P. Mackay, assisted by Dr. Donald D. Layton, resident neurologist at St. Luke's. Sessions are conducted on Tuesday mornings and on Friday afternoons. Applicants should request referral or sanction from their physician before applying for admission. Any member of the Chicago chapter of the National Multiple Sclerosis Society or patients residing within the metropolitan area of Chicago may apply for admission. For a clinic appointment call the Morton Clinic, HA 7-5000, and ask for Miss Dana or Miss Gilham.

Founders' Day Awards.—Awards for high scholastic averages and meritorious research were presented during the 98th founders' day ceremonies at Northwestern University Medical School to the following: Dr. Arthur L. Norins, Park Ridge, Ill., winner of the Borden undergraduate research award in medicine ($500 and a certificate), given to a student in the graduating class who performed meritorious medical research while an undergraduate medical student; Edwin L. Cohen, Toledo, Ohio, winner of the James P. Simonds award ($50 and a certificate), established this year by Phi Chi fraternity in honor of Dr. James P. Simonds, emeritus professor and chairman of the department of pathology at the medical school, for clinical achievement and promise as shown in the first study of clinical medicine in hospitals during the junior year; and Donald M. Hopkins, Walnut, Ill., winner of the George J. Dennis Phi Rho Sigma award ($100 and a certificate) for the highest scholastic average in studies during the first three years of medical school. A certificate of recognition was given to Phi Delta Epsilon as the medical fraternity maintaining the highest scholastic average for the year, and Dr. Melvin P. Firestone, of Jersey City, N. J., received a $50 bond as the student in the fraternity who contributed most toward winning the award. Edward H. Cornell, Park Ridge, Ill., was winner of the $50 Leslie B. Arey award, established by Phi Beta Pi in honor of Leslie B. Arey, Ph.D., professor and chairman of the department of anatomy, and given to the freshman student with the highest grade in anatomy studies.

MICHIGAN

State Medical Society Election.—Newly elected officers of the Michigan State Medical Society include: Dr. William S. Jones, Menominee, president; Dr. Arch Walls, Detroit, president-elect. Dr. L. Fernald Foster, Bay City, is secretary, and Dr. William A. Hyland, Grand Rapids, is treasurer of the society.

Fertility Center.—A new fertility center has been established at the Woman's Hospital, Detroit, under the joint sponsorship of the hospital and Wayne University College of Medicine. Dr. Robert B. Leach, assistant professor of medicine at the college, is medical director. Couples will be accepted in the center only when referred by practicing physicians.

Otolaryngology Conference.—The department of postgraduate medicine at the University of Michigan Medical School, Ann Arbor, will hold an otolaryngology conference at the University Hospital, April 19-21, 1956, under the direction of Dr. Albert C. Furstenberg, chairman, department of otolaryngology. Guest lecturers, together with members of the staff of the department of otolaryngology, will participate in the program. For information, write to Dr. John M. Sheldon, Director, Department of Postgraduate Medicine, University Hospital, Ann Arbor.

MINNESOTA

Dr. Barr Succeeds the Late Dr. Chesley.—Dr. Robert N. Barr, Minneapolis, who worked closely with the late Dr. Albert J. Chesley for 21 years, has been appointed secretary and executive officer of the Minnesota Department of Health. Dr. Barr, Minnesota's fifth health officer since the state board of health was founded in 1872, is a consultant to the national advisory committee on heart disease control and a member of the national advisory committee on functional study of public health nursing, both committees of the U. S. Public Health Service, and serves the subcommittee on chronic disease, Association of State and Territorial Health Officers, and the committee on aging of the American Public Welfare Association.

Clergymen's Workshop on Psychiatric Problems.—For the third year, the Hamm Foundation of St. Paul has made a grant to the St. John's Institute for Mental Health at Collegeville, which assures the continuation of the institute's program of summer workshops for clergymen of all faiths who wish to study psychological and psychiatric problems. The summer clinics, which have pioneered in bringing together clergymen of all faiths for the study of mental health problems, were attended last year by 123 priests and ministers, who came from 17 states, 2 Canadian provinces, the Bahama Islands, Puerto Rico, and France. The faculty included four presidents of the American Psychiatric Association or the American Orthopsychiatric Association. Chairman of the board of the institute is Dr. Hyman S. Lippman, director of the Amherst H. Wilder Child Guidance Clinic of St. Paul.

NEBRASKA

Crippled Children's Clinics.—Clinics for crippled children have been scheduled at the Norfolk State Hospital in Norfolk, Jan. 7, 1956, and St. Mary Hospital, Scottsbluff, Jan. 21.

University News.—Three stones, inscribed "Omaha Medical College," a gift of Dr. Frank L. Dunn, constitute the first building materials for the new hospital unit of the University of Nebraska College of Medicine in Omaha. The stones, salvaged from the Omaha Medical College, which was incorporated into the University of Nebraska medical education program in 1901, were found recently in the basement of a wrecking company

which tore down the building in the early 1930's. According to Dr. James P. Tollman, dean of the college of medicine, the stones will be set into an inner wall of the new hospital building to commemorate the beginning of formal medical education.

Personal.—Dr. Clarence Minnick and Dr. Benjamin F. Stewart, Cambridge, were jointly honored by the Cambridge Chamber of Commerce at a dinner, at which Dr. Earl F. Leininger, McCook, gave an address. Dr. Minnick has practiced medicine for 50 years and Dr. Stewart for 55.——Dr. William L. Howell, who has served the Hyannis area for 41 years, was recently honored at a dinner given by 500 residents of the area, who presented him with a 1956 Oldsmobile. Dr. Howell, who was in the Army Medical Corps during World War I, has been a member of the school board of Hyannis for 21 years and its chairman during the last 19 years. He also served eight years on the town council.

NEW YORK

County Society Honors Father and Son.—At its annual meeting, the Madison County Medical Society presented to Dr. John D. George Sr., Verona, the Doctor Milton R. Joy Memorial award for service to the people and medical profession in Madison County, and elected Dr. John D. George Jr., Verona, vice-president. The senior Dr. George, father of four physician sons, has practiced for over 50 years.

Tuberculosis Campaign.—According to a joint statement by the departments of health, hospitals, and welfare of New York City and the Brooklyn, Queensboro, and New York tuberculosis and health associations, the prevention and control of tuberculosis is one of the costliest health problems in New York City. The statement says that, "In dollars and cents, a conservative estimate of the annual cost of tuberculosis in New York City is $50,000,000." Prevention and practical control are said to be impeded by four major obstacles: (1) absence of warning signals in early tuberculosis (in 1954, of the 6,582 New Yorkers reported to have newly discovered tuberculosis, 4 out of 5 had the disease in moderately or far-advanced form when detected. In addition, about 10,000 New Yorkers have the disease without knowing it); (2) lack of adequate housing and proper nutrition for large numbers of persons; (3) length of time required for cure; (4) lack of sufficient rehabilitation and community services to facilitate the patient's return to a useful, productive life.

University News.—Dr. Richard T. Beebe, chairman, department of medicine, Albany Medical College, announces the appointment of Dr. Joseph John Russo as assistant professor of dermatology and of Dr. Leonard D. Policoff, formerly of Richmond, Va., as associate professor of physical medicine and rehabilitation, head, subdepartment of physical medicine and rehabilitation in the department of medicine, and assistant professor of medicine. Dr. Donald W. Drew has been promoted from instructor to assistant professor of medicine and Dr. Frank C. Maxon Jr. from instructor in medicine to assistant professor of medicine and head of the subdepartment of pulmonary diseases. ——Dr. Thomas N. A. Jeffcoate, professor of obstetrics and gynecology, University of Liverpool (England) began a month's visiting professorship of obstetrics and gynecology at the State University of New York College of Medicine at New York City, Brooklyn, on Nov. 7. Dr. Jeffcoate delivered the Sir Arcot Mudaliar Lectures in Madras, India, this year and recently completed a visiting professorship at the Royal Prince Albert Hospital in Sydney, Australia. He presently holds appointments at the Liverpool Royal Infirmary, the Liverpool Maternity Hospital, and the Mill Road Maternity Hospital in Liverpool. ——Dr. Matthew Z. Levy has been promoted from assistant professor to associate professor of physiology at the Albany Medical College of Union University. Dr. Levy, who has been on the staff of Albany Medical College since 1952, previously taught in the department of physiology at Western Reserve University School of Medicine, Cleveland.

New York City

Lecture on Neoplastic Diseases.—On Jan. 6 at 3 p. m. "The Role of Hypophysectomy in Cancer of the Breast" will be discussed by Dr. Bronson S. Ray, chief, department of neurosurgery, New York Hospital, and professor of clinical surgery, Cornell University Medical College, in the West Basement Conference Hall at Montefiore Hospital.

Meeting of Cancer Society.—The New York Cancer Society will meet at 8:30 p. m., Jan. 3, 1956, at the New York Academy of Medicine, Fifth Avenue at 103rd St. The following program will be presented:

Investigative Trends in Chemotherapy in Treatment of Melanoma, Sidney Farber, Children's Cancer Research Foundation, Boston.
Current Concepts in the Treatment of Melanoma, Stephen L. Gumport, New York University Post-Graduate Medical School.
Melanoma of the Conjunctiva, Algernon B. Reese, Eye Institute, Columbia-Presbyterian Medical Center.
Discussion, Arthur Purdy Stout, Francis Delafield Hospital, Columbia-Presbyterian Medical Center.

Physicians and medical students are cordially invited to attend.

Dr. Edwards Goes to Yale.—Dr. Herbert R. Edwards, executive director, New York Tuberculosis and Health Association, since 1947, has resigned to become associate professor of medicine and public health, a newly created post at the Yale University School of Medicine, New Haven, Conn. Dr. Edwards will also be consultant on tuberculosis at the Grace-New Haven Community Hospital, where he will direct a William Wirt Winchester Clinic. Dr. Edwards served as clinical instructor in medicine at the Yale school of medicine from 1928 to 1934. In 1926 and 1927 he was medical consultant on a Department of Interior survey of Indian affairs. From 1942 until this year, he was assistant professor of public health at Cornell University Medical College.

NORTH CAROLINA

Memorial Lectureship.—On Nov. 8 the Chi Theta chapter of Phi Rho Sigma at the Bowman Gray School of Medicine of Wake Forest College, Winston-Salem, sponsored the first annual Herbert M. Vann Memorial Lectureship. Dr. Vann, professor of anatomy for more than a quarter of a century, participated actively in affairs of the fraternity as faculty advisor, both on the campus at Wake Forest and after the school of medicine was expanded and moved to Winston-Salem. Joseph Eldridge Markee, Ph.D., professor and chairman of the department of anatomy at Duke University School of Medicine, Durham, was the first lecturer in the annual series.

Personal.—Dr. Emery C. Miller, instructor in internal medicine, Bowman Gray School of Medicine of Wake Forest College, Winston-Salem, has assumed his duties as director of the outpatient department of the North Carolina Baptist Hospital, Winston-Salem, replacing Dr. Charles E. Richards, who has returned to his home state of Nebraska as associate professor of internal medicine at the University of Nebraska, Omaha. Dr. Miller served in Korea and has held appointments as fellow and resident in the Joslin Clinic in Boston and as fellow in internal medicine in the Bowman Gray School of Medicine.——Dr. Lorant Forizs, clinical director, North Carolina alcoholic rehabilitation program, has accepted the position of clinical director with the Florida alcoholic rehabilitation program. Dr. Forizs has served as clinical director for the state hospital in Butner and as clinical assistant professor of psychiatry at the University of North Carolina School of Medicine, Chapel Hill, and has been a lecturer at the Duke University School of Medicine, Durham, and the Yale Summer School of Alcohol Studies, New Haven, Conn. A Hungarian by birth, he held a professorship at Budapest University and fled to Germany before the Russian occupation. Slated to emigrate from Munich, Germany, to America as a displaced person, he had been asked to obligate himself to work a year as a farm laborer in Minnesota. However, through the help of the 98th General Hospital, U. S. Army, where he worked as a civilian psychiatrist, he came to the attention of the North Carolina state hospital program. He expects to make his home in Avon Park, Fla.

OREGON

Hospital News.—The University of Oregon Medical School announces that the University Hospital, which was originally scheduled to admit its first patient in January, will open in

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March. Dr. Charles N. Holman has been named medical director and administrator of the University Hospital and Dr. R. Jarvis Gould, administrator of Multnomah Hospital. Dr. Gould, who was named assistant medical director of hospitals and clinics in 1950, will maintain this position as well as his new one. In addition to his new duty, Dr. Holman will continue in his present capacity as medical director for Multnomah Hospital, the University State Tuberculosis Hospital, Doernbecher Memorial Hospital for Children, and the Outpatient Clinic, Portland.

RHODE ISLAND

Dr. Michael Sullivan Honored.—The city of Newport recently dedicated in the name of Dr. Michael H. Sullivan, past-president of the Rhode Island Medical Society, one of the newest schools in the state, a half-million-dollar elementary school that will also serve as a training school for students of Salve Regina College, Newport, who are entering the teaching profession. Dr. Sullivan has been chief of obstetrics at Newport Hospital for more than 50 years.

TEXAS

Personal.—Dr. William M. Campbell, Weatherford, was recently honored when the name of Parker County Hospital was changed to Campbell Memorial Hospital.——Dr. David S. Stayer, Irving, has been appointed to succeed Dr. Wendel A. Stiles, Dallas, who has resigned as a member of the state board of medical examiners. The appointment is for a term to expire April 13, 1957. Dr. Stayer's wife is Dr. Irene M. Stayer.

Visiting Lectureship.—A visiting lectureship has been sponsored by the Texas Radiological Society for the University of Texas School of Medicine, Galveston, Baylor University College of Medicine in Houston, and the Southwestern Medical School of the University of Texas, Dallas. Dr. Franz J. Buschke, Seattle, guest lecturer for the first group of lectures, to be given in January, 1956, will have as his subject, "The Role of Common Sense in Cancer Therapy." Information concerning the date and time of each lecture may be obtained from Dr. Roscoe P. O'Bannon, Fort Worth, secretary-treasurer, or Dr. Martin Schneider, Galveston, president.

Chair in Cardiology.—The University of Texas Postgraduate School of Medicine announces the establishment of the James J. and Una Truitt Chair in Cardiology and its sponsorship of a course in practical bedside cardiology, to be given by Dr. Samuel A. Levine, clinical professor of medicine at Harvard Medical School, Boston, March 14-17, at Houston. Co-sponsors include the Baylor University College of Medicine and the Houston Heart Association. The course will feature the recognition and management of the most common cardiovascular problems in practice. Information may be obtained from the University of Texas Postgraduate School of Medicine, Texas Medical Center, Houston 25.

VIRGINIA

Personal.—Dr. Edward E. Haddock, Richmond, will begin his first term as state senator when the General Assembly convenes in January, 1956. Dr. Haddock has served as a member of the City Council of Richmond and as mayor of Richmond.

Oto-Ophthalmologic Congress.—The Gill Memorial Eye, Ear and Throat Hospital, Roanoke, will hold its 29th annual spring congress in ophthalmology and otolaryngology and allied specialties in Roanoke April 2-7, 1956. Among the guest speakers will be Drs. Rudolf Aebli, New York; Samuel Blank, Philadelphia; John E. Bordley, Baltimore; Virgil G. Casten, Boston; Jack S. Guyton, Detroit; Bayard T. Horton, Rochester, Minn.; Curwood R. Hunter, Cincinnati; John R. Lindsay, Chicago; John E. Magielski, Ann Arbor, Mich.; Stephen J. H. Miller, London, England; Peter A. N. Pastore, Richmond; Herbert J. Rinkel, Kansas City, Mo.; C. Dwight Townes, Louisville, Ky.; Everett R. Veirs, Temple, Texas; and Henry P. Wagener, Rochester, Minn.

WISCONSIN

University Honored.—In a survey of the last 50 years of American medical progress, the American Foundation has cited the University of Wisconsin, Madison, for pioneering in many phases of medical research. Some of the major projects given particular attention are the fundamental work of bacteriologists on nutrition and metabolism of bacteria, work in plant pathology, genetics, human and animal nutrition, the work that led to the discovery of vitamin B_{12}, heart and cancer research, hormone physiology, the development of bishydroxycoumarin, and work at the Enzyme Institute.

ALASKA

Changing Mortality Rates.—According to Dr. C. Earl Albrecht, Juneau, commissioner of health, Alaska Board of Health, the tuberculosis death rate among the natives dropped from 584.3 per 100,000 population in 1949 to 225.1 in 1954. Accidents are now the chief cause of death, with the proportion of accidental deaths being nearly three times that of the states. Heart diseases are in second place and tuberculosis in third. The territory's births have almost doubled since 1950, with 7,040 recorded in 1954. There were 1,232 deaths reported in 1950 as compared with 1,195 in 1954. The 1950 population figure was 137,000 while last year's was (estimated) 208,000.

Personal.—Two second-generation physicians, having finished their hospital training in the states, are now in Alaska to join their respective fathers in the practice of medicine. Dr. R. Holmes Johnson, who is practicing with his father, Dr. A. Holmes Johnson in Kodiak, was named intern of the year by the Methodist Hospital attending staff in New York City. Dr. J. Donald Rude is established in Juneau with his father, Dr. Joseph O. Rude, and also with Dr. John H. Clements. Dr. Rude served his externship in the Permanente Hospital (now Kaiser Foundation Northern Hospital) in Vancouver, Wash., and his internship at Rochester (N. Y.) General Hospital. During the war he served three years with the Navy in the Pacific.

GENERAL

UNESCO Aids Standardization of Anatomic Terms.—Over 5,600 standard terms in anatomy, printed with the assistance of UNESCO in French, English, and German, were adopted recently in Paris by the International Congress of Anatomists. The result of 60 years' work by anatomists, the "Nomina Anatomica" will greatly facilitate the exchange of information on latest developments in medical science and will eliminate much of the confusion caused by the fact that previously the same structure was often known by three or four different names. The new standard list, which has been distributed to all national anatomical societies, will be of particular worth to specialized branches of surgery.

Prize for Essay in the History of Medicine.—Mr. and Mrs. Henry Schuman of New York offer annually a prize of $250 for an original essay written in English, not to exceed 10,000 words, on some subject pertaining to the history or philosophy of medicine. The essayist must be a doctor of medicine or of one of the medical sciences who has taken his or her M.B., M.D., or Ph.D. degree not more than five years before submission of the paper. The competition is open to candidates of any country. Essays that have won awards in other contests are not eligible. The prize-winning essay will be published in the *Journal of the History of Medicine*. Entries should be submitted on or before May 1, 1956, to Dr. John F. Fulton, Yale University School of Medicine, 333 Cedar St., New Haven 11, Conn.

Symposium on Atomic Energy.—A symposium, "Atomic Energy and Agriculture," sponsored by the Oak Ridge (Tenn.) Institute of Nuclear Studies and the American Association for the Advancement of Science, was presented Dec. 22-29 at the Municipal Auditorium, Atlanta, Ga., under the chairmanship of Cyril L. Comar, Ph.D., chief, biomedical research, Oak Ridge Institute of Nuclear Studies. The Thursday afternoon session included discussions on radiation facilities designed to process commercial quantities of food products; the design of a megacurie radiation source; the effect of irradiation sterilization on protein, carbohydrate, and fat with particular reference to their

nutritive value; toxicological studies on food sterilized by ionizing radiations; present-day status of radiation sterilization; and feasibility of food irradiation.

International Research Council.—Dr. Hamilton Cameron, New York City, who in January, 1953, became one of 600,000 hemiplegic aphasics, recently incorporated the International Research Council, the first world-wide medical confraternity for the dissemination of knowledge concerning aphasias associated with hemiplegia. The aims of the council include: the coordination of factual clinical data regarding the classification of aphasia; the establishment of a clearing house on the subject; publication of a monthly *Review-Bulletin;* the building of a library of books, publications, and reprints concerned with this specialized subject; and the securing of funds for the continuance of its work by voluntary subscription. Information may be obtained from Dr. Hamilton Cameron, Founder and General Director, 601 W. 110th St., New York City 25.

Essay Contest.—The Council on Undergraduate Medical Education of the American College of Chest Physicians offers three cash awards ($250, $100, and $50) annually for the best contributions prepared by undergraduate medical students on any phase in the diagnosis and treatment of chest diseases (heart and/or lungs). The winning contributions for 1956 will be announced at the 22nd annual meeting of the American College of Chest Physicians in Chicago, June 7-10, 1956. The following conditions must be observed: (1) completion of an application form, which may be obtained by writing to the Executive Director, American College of Chest Physicians, 112 E. Chestnut St., Chicago 11; (2) submission of five copies of the manuscript typewritten in English (double-spaced) to the college offices in Chicago not later than April 10, 1956; and (3) identification of the author by a motto or other device on the title page and a sealed envelope bearing the same motto on the outside and with the name and address of the author enclosed.

Medical Research Group Honors Transatlantic Airline.—The Animal Care Panel of the National Society for Medical Research recently presented Seaboard & Western Airlines, pioneer transatlantic all-cargo carrier, an award for its role in the air transport of animals used for medical research. In presenting the award, Nathan R. Brewer, D.V.M., in charge of central animal quarters at the University of Chicago and president of the panel, stated that his group, composed of technical and professional people interested in the care and handling of laboratory animals, believes "that man owes a responsibility to animals used for his benefit, and laboratory animals have contributed and continue to contribute an immense store to human knowledge and welfare." The award read, in part, "For facilitating medical research and medical progress through efficient and excellent care of vitally needed laboratory animals." Seaboard & Western played a prominent role in the air movement of rhesus monkeys used in the development and production of the Salk vaccine.

New Quarterly on Mental Health.—The first issue of a quarterly journal, *Behavioral Science,* official publication of the new Mental Health Research Institute at the University of Michigan, Ann Arbor, will appear in January, 1956. It will contain articles on general theories of behavior and on empirical research specifically oriented toward such theories. An interdisciplinary approach to problems of behavior will be stressed. Although the scope of the journal will include all aspects of behavior that can be subsumed under broadly general interdisciplinary theory, special emphasis will be placed on contributions relating to research in mental health and disease. The editorial board will include the following physicians: Dr. Franz Alexander (psychoanalysis), Dr. Ralph W. Gerard (neurophysiology), Dr. James G. Miller (psychology and psychiatry), Chicago, and Dr. Raymond W. Waggoner, Ann Arbor (psychiatry). Subscriptions will be $6 a year. Manuscripts and subscriptions may be sent in care of Dr. James G. Miller, Mental Health Research Institute, University of Michigan, Ann Arbor, Mich.

Leukemia Society Grants.—In announcing recent grants in aid for leukemia research projects in the United States and England, Mrs. Rudolph Roesler de Villiers, president of the Leukemia Society, Inc., pointed out that the disease is today the fourth largest killer of children in New York City, with proportionately high incidence in other parts of the country. The grants, totaling $4,000, the first of a series that the society has instituted since changing its name from Robert Roesler de Villiers Foundation, Inc., mark the organization's broadening of scope consistent with the world-wide aspects of the disease. Awards were made to Drs. James F. Holland and Avery A. Sandberg, associate chiefs of medicine at Roswell Park Memorial Institute of Buffalo, to pursue their studies of the biochemical characteristics of the disease; Dr. Robert F. Schilling, assistant professor, department of medicine, University of Wisconsin Medical School, Madison, for studies of human bone marrow in relation to leukemia; Dr. Stuart C. Finch, Yale University School of Medicine, New Haven, Conn., to continue studies on the transmittal of leukemia in rats; and Dr. Robert H. Mole of the Atomic Energy Research Establishment, Harwell, England, for studies on the effects of irradiation on leukemia.

Group Studies Poliomyelitis Vaccination.—The Study Group on Poliomyelitis Vaccination called by the World Health Organization for a recent meeting in Stockholm, Sweden, reports that about 10 million children in five countries have been vaccinated against poliomyelitis with no ill effects, apart from the comparatively few cases in the United States that were traced to the use of certain batches of faulty vaccines. According to the study group, whereas vaccine of the Salk type has been shown to give good protection to children between the ages of 6 to 10 years, this is the only age group for which sufficient evidence is available to allow a definite opinion to be expressed. It is not yet possible to say how long the immunity conferred by vaccination can last. A 40-page report prepared by the group will be submitted to the director-general of the World Health Organization, who will decide how it can best be used for the guidance of health authorities all over the world. The group included Drs. Alexander D. Langmuir, chief epidemiology branch, Communicable Disease Centre, Atlanta, Ga.; Prof. John R. Paul, Yale University School of Medicine, New Haven, Conn.; and Dr. Albert B. Sabin, Children's Hospital Research Foundation, University of Cincinnati College of Medicine.

Mortality Figures.—According to the Metropolitan Life Insurance Company, 1 Madison Ave., New York City, the experience of its industrial policy holders indicates that prevailing mortality among Americans in the middle and later age groups is much lower than two decades ago. Among those insured, the death rate from all causes for white men at ages 45-74 fell from 29.9 per 1,000 in 1935 to 22.5 in 1954, a decline of 25%. The corresponding decrease among white women was even greater—from 21.6 to 12.2 per 1,000, or nearly 45%. For each sex, the relative improvement in mortality was somewhat greater at ages 45-54 than at the later ages. The greatest reductions in mortality have been recorded for the infectious diseases, reflecting the revolutionary advances made in their treatment with the newer drugs and antibiotics. The death rates from pneumonia and influenza and from tuberculosis at the ages past midlife have fallen to fractions of what they were 20 years ago. Great progress has also been made in reducing the mortality from diseases of the heart and kidneys. Between 1935 and 1939 and 1950 and 1954, the decrease was about 30% among the insured women in each age group within the 45-74 range; among the men the reduction in the death rate from these diseases amounted to 5% at ages 55-64 and 16% at ages 65-74. The mortality from cancer decreased fully one-sixth among the insured women in the 45-74 age range; among the men, however, the cancer death rate increased somewhat, reflecting the sharp upward trend in the recorded mortality from respiratory cancer. The death rate from accidents has greatly improved over the 20-year period in the insurance experience.

FOREIGN

Meeting on Internal Medicine.—The fourth International Congress of Internal Medicine will be held in Madrid, Spain, Sept. 19-23, 1956. The main subjects will be "The Role of the Adrenals in the Pathogenesis and Evolution of Internal Diseases" and

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"Bronchial Asthma and Emphysema." Communications on these themes or on any others of free choice will be accepted. Please address all inquiries to the Secretariat: Drs. J. C. de Oya and J. Gimena, Hortaleza n° 90.

Cancer Meeting in Paris.—At an international conference called by UNESCO in Paris, France, Dec. 12-16, 1955, to decide the organization's role in the world-wide problem of cancer, Dr. Harold L. Stewart of the National Cancer Institute, Bethesda, Md., and Dr. Harold P. Rusch, director of McArdle Memorial Laboratory at the University of Wisconsin, Madison, represented the United States. About 20 conference members were present from England, Denmark, Germany, the Netherlands, Switzerland, France, India, and Israel.

Seminar Congresses in Ophthalmology.—In its seminar congresses in ophthalmology the American Medical Society of Vienna, Austria, will present the following programs by the medical faculty of the University of Vienna:

Feb. 1-3, Tumors of the Eye; External Diseases of the Eye; Fundus Microscopy.
March 1-3, Anatomy of the Orbit and Adnexa; Indirect Ophthalmoscopy; Gross Pathology.
April 5-7, Histology of the Eye; Histopathology of the Eye; Ocular Muscle Anomalies.
May 3-5, Refraction, Ocular Motility; Perimetry.
June 7-9, Plastic Surgery of the Eye; External Diseases of the Eye; Glaucoma.
July 5-7, Slit Lamp Microscopy; Ophthalmoscopy; Ocular Therapeutics.
Aug. 2-4, Electrosurgical Treatment of the Eye; Ocular Cataracts; Retinal Detachment.
Sept. 6-8, Operative Ophthalmology; Gonioscopy; Anomalies.
Oct. 4-6, Neuroophthalmology; Diseases of the Retina; Physiology of the Eye.
Nov. 8-10, Ophthalmic Medicine; Diagnostic Examination; The Ocular Adnexa (Selected Topics).

Details may be obtained from the American Medical Society of Vienna, I. Vienna, Universitaetsstrasse 11. Cable, "Ammedic," Vienna.

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MEETINGS

AMERICAN MEDICAL ASSOCIATION: Dr. George F. Lull, 535 North Dearborn St., Chicago 10, Secretary.

1956 Annual Meeting, Chicago, June 11-15.

1956 Clinical Meeting, Seattle, Nov. 27-30.

1957 Annual Meeting, New York, June 3-7.

1957 Clinical Meeting, Philadelphia, Dec. 3-6.

1958 Annual Meeting, San Francisco, June 23-27.

ANNUAL CONGRESS ON INDUSTRIAL HEALTH, Sheraton-Cadillac Hotel, Detroit, Jan. 23-24. Mr. Clark D. Bridges, 535 N. Dearborn St., Chicago 10, Acting Secretary.

ANNUAL CONGRESS ON MEDICAL EDUCATION AND LICENSURE, Palmer House, Chicago, Feb. 11-14. Dr. Edward L. Turner, 535 North Dearborn St., Chicago 10, Secretary.

ALASKA TERRITORIAL MEDICAL ASSOCIATION, Alaska Native Health Service Hospital, Anchorage, Feb. 20-22. Dr. Robert B. Wilkins, 1121 Fourth Ave., Anchorage, Secretary.

AMERICAN ACADEMY OF ALLERGY, Chase Hotel, St. Louis, Feb. 6-8. Dr. Francis C. Lowell, 65 East Newton St., Boston, Secretary.

AMERICAN ACADEMY OF OCCUPATIONAL MEDICINE, Netherlands-Plaza Hotel, Cincinnati, Feb. 15-17. Dr. Leonard J. Goldwater, 600 W. 168th St., New York 32, Secretary.

AMERICAN ACADEMY OF ORTHOPAEDIC SURGEONS, Palmer House, Chicago, Jan. 28-Feb. 2. Dr. John R. Norcross, 122 South Michigan Blvd., Chicago 3, Secretary.

AMERICAN COLLEGE OF RADIOLOGY, Drake Hotel, Chicago, Feb. 10-11. Mr. William C. Stronach, 20 North Wacker Drive, Chicago 6, Executive Secretary.

AMERICAN SOCIETY FOR SURGERY OF THE HAND, Chicago, Jan. 27. Dr. George V. Webster, 1145 East Green St., Pasadena 1, Calif., Secretary.

CENTRAL SURGICAL ASSOCIATION, Hotel Kahler, Rochester, Minn., Feb. 23-25. Dr. Charles D. Branch, 102 North St., Peoria, Ill., Secretary.

EASTERN SECTION, AMERICAN LARYNGOLOGICAL, RHINOLOGICAL AND OTOLOGICAL SOCIETY, Boston, Jan. 13. Dr. John A. Murtagh, Dartmouth College, Hanover, N. H., Vice President.

LOS ANGELES MIDWINTER MEDICAL CONVENTION, Biltmore Hotel, Los Angeles, Jan. 3-5. Dr. Paul D. Foster, 1925 Wilshire Blvd., Los Angeles 58, General Chairman.

MEDICAL SOCIETY EXECUTIVES CONFERENCE, Drake Hotel, Chicago, Feb. 6-8. Mr. H. Martin Baker, 1102 South Hillside, Wichita 17, Kansas, Secretary.

MIDDLE SECTION, AMERICAN LARYNGOLOGICAL, RHINOLOGICAL AND OTOLOGICAL SOCIETY, Netherland Plaza, Cincinnati, Jan. 16. Dr. William H. Craddock, 2328 Auburn Ave., Cincinnati 19, Vice President.

NEUROSURGICAL SOCIETY OF AMERICA, Hotel Key Biscayne, Key Biscayne, Miami, Fla., Jan. 18-21. Dr. Lester A. Mount, 700 West 168th St., New York 32, Secretary.

NORTHWEST SOCIETY FOR CLINICAL RESEARCH, University of Oregon Medical School, Portland, Ore., Jan 21. Dr. Arthur L. Rogers, 1216 S.W. Yamhill St., Portland 5, Ore., Secretary.

REGIONAL MEETINGS, AMERICAN COLLEGE OF PHYSICIANS:

SHREVEPORT, LA., Jan. 14. Dr. M. D. Hargrove, 803 Jordan St., Shreveport, La., Governor.

PHILADELPHIA, Jan. 27. Dr. Thomas M. McMillan, 330 South 9th St., Philadelphia 7, Governor.

SASKATOON, SASK., Feb. 3-4. Dr. C. H. A. Walton, Winnipeg Clinic, Winnipeg, Man., Canada, Governor.

TUCSON, ARIZ., Feb. 11. Dr. Leslie R. Kober, 15 East Monroe St., Phoenix, Ariz., Governor.

SECTIONAL MEETINGS, AMERICAN COLLEGE OF SURGEONS:

JACKSONVILLE, FLA., Hotel George Washington, Jan. 16-18. Dr. Kenneth A. Morris, 2522 Oak St., Jacksonville 4, Fla., Chairman.

PHILADELPHIA, The Bellevue-Stratford, Feb. 13-16. Dr. Calvin M. Smyth Jr., Abington Memorial Hospital, Abington, Pa., Chairman.

SOCIETY OF UNIVERSITY SURGEONS, Hotel Claypool, Indianapolis, Feb. 8-10. Dr. C. Rollins Hanlon, 1325 South Grand Blvd., St. Louis 4, Secretary.

SOUTH ATLANTIC ASSOCIATION OF OBSTETRICIANS AND GYNECOLOGISTS, Hollywood Beach Hotel, Hollywood, Fla., Jan. 28-Feb. 1. Dr. C. H. Mauzy, Bowman Gray School of Medicine, Winston-Salem, N. C., Secretary.

SOUTHERN SECTION, AMERICAN FEDERATION FOR CLINICAL RESEARCH, Jung Hotel, New Orleans, Jan. 20. Dr. John H. Moyer, 1200 M.D. Anderson Blvd., Houston, Texas, Secretary.

SOUTHERN SECTION, AMERICAN LARYNGOLOGICAL, RHINOLOGICAL AND OTOLOGICAL SOCIETY, The Shamrock, Houston, Texas, Jan. 27-28. Dr. J. M. Robison, 1304 Walker Ave., Houston 2, Texas, Chairman.

U. S. SECTION, INTERNATIONAL COLLEGE OF SURGEONS, REGIONAL MEETING, Greenbrier Hotel, White Sulphur Springs, W. Va., Feb. 12-15. Dr. E. G. Gill, 711 South Jefferson St., Roanoke, Va., Chairman.

WESTERN SECTION, AMERICAN FEDERATION FOR CLINICAL RESEARCH, Golden Bough Theater, Carmel, Calif., Jan. 26. Dr. Charles M. Grossman, 301 Selling Bldg., Portland 5, Ore., Secretary.

WESTERN SECTION, AMERICAN LARYNGOLOGICAL, RHINOLOGICAL AND OTOLOGICAL SOCIETY, County Medical Society Bldg., San Francisco, Jan. 21. Dr. David D. DeWeese, 1216 S. W. Yamhill St., Portland, Ore., Vice President.

WESTERN SOCIETY FOR CLINICAL RESEARCH, Carmel-by-the-Sea, Calif., Jan. 27-28. Dr. Arthur J. Seaman, University of Oregon Medical School, Portland 1, Ore., Secretary.

FOREIGN AND INTERNATIONAL

ALL INDIA MEDICAL CONFERENCE, Jaipur, India, Dec. 26-28. Dr. B. N. Consul, Association Bldg., S.M.S. Hospital Premises, Jaipur, India, Organizing Secretary.

CANADIAN MEDICAL ASSOCIATION, Quebec, P. Q., Canada, June 10-14, 1956. Dr. Arthur D. Kelly, 150 St. George St., Toronto 5, Ont., Canada, Secretary.

CONFERENCE OF INTERNATIONAL UNION FOR HEALTH EDUCATION OF THE PUBLIC, Rome, Italy, April 27-May 5, 1956. Mr. Lucien Viborel, 92 rue St. Denis, Paris 1er, France, Secretary-General.

CONGRESS OF INTERNATIONAL ANESTHESIA RESEARCH SOCIETY, Miami Beach, Fla., U.S.A., April 9-12, 1956. For information write: Dr. R. J. Whitacre, 13951 Terrace Road, Cleveland 12, Ohio, U. S. A.

CONGRESS OF INTERNATIONAL ASSOCIATION OF LIMNOLOGY, Helsinki, Finland, July 26-Aug. 7, 1956. For information address: Dr. H. Luther, Snellmansgatan 16 C 36, Helsinki, Finland.

CONGRESS OF INTERNATIONAL ASSOCIATION OF LOGOPEDICS AND PHONIATRICS, Barcelona, Spain, Sept. 3-7, 1956. Dr. J. Perello, Provenza 319, Barcelona 9, Spain, Secretary-General.

CONGRESS OF INTERNATIONAL SOCIETY OF HEMATOLOGY, Hotel Somerset, Boston, Mass., U.S.A., Aug. 27-Sept. 1, 1956. Dr. W. C. Moloney, 39 Bay State Road, Boston, Mass., U.S.A., Secretary.

CONGRESS OF LATIN SOCIETY OF OPHTHALMOLOGY, Madrid, Spain, April 24-28, 1956. For information address: Dr. Costi, Montalban 3, Madrid, Spain.

EUROPEAN CONGRESS OF ALLERGOLOGY, Florence, Italy, Sept. 12-15, 1956. Prof. Umberto Serafini, Instituto de Patologia Medica, Viale Morgagni, Florence, Italy, Secretary-General.

EUROPEAN CONGRESS OF CARDIOLOGY, Stockholm Sweden, Sept. 10-14, 1956. Dr. Karl Erik Grewin, Sodersjukhuset, Stockholm, Sweden, General Secretary.

EUROPEAN SYMPOSIUM ON VITAMIN B12, Hamburg, Germany, May, 1956. For information write: Doz. Dr. H. Bauer, Nervenklinik, Hamburg-Eppendorf, Germany.

HEALTH CONGRESS, ROYAL SOCIETY FOR THE PROMOTION OF HEALTH, Blackpool, England, April 24-27, 1956. Mr. P. Arthur Wells, 90 Buckingham Palace Road, London S.W. 1, England, Secretary.

INTER-AMERICAN CONGRESS OF CARDIOLOGY, Havana, Cuba, Nov. 4-10, 1956. For information address: Dr. Ramon Aixala, Apartado 2108, Havana, Cuba.

INTERNATIONAL ACADEMY OF PATHOLOGY, Cincinnati, Ohio, U. S. A., April 24-25, 1956. Dr. F. K. Mostofi, Armed Forces Institute of Pathology, Washington 25, D. C., U. S. A., Secretary.

INTERNATIONAL CONGRESS AGAINST ALCOHOLISM, Istanbul, Turkey, Sept. 10-15, 1956. For information address: International contre l'Alcoolisme, Case Gare 49, Lausanne, Switzerland.

INTERNATIONAL CONGRESS ON ANIMAL REPRODUCTION, Arts School, University of Cambridge, Cambridge, England, June 25-30, 1956. Dr. Joseph Edwards, Production Division, Milk Marketing Board, Thames Ditton, Surrey, England, Hon. Secretary.

INTERNATIONAL CONGRESS OF ANTHROPOLOGICAL AND ETHNOLOGICAL SCIENCES, Philadelphia, Pa., U. S. A., Sept. 2-9, 1956. Dr. William N. Fenton, National Research Council, Division of Anthropology and Psychology, 2101 Constitution Avenue, Washington 25, D. C., U. S. A., Secretary-General.

INTERNATIONAL CONGRESS OF DIETETICS, Congress Palace, Esposizione Universale Roma, Rome, Italy, Sept. 10-14, 1956. Prof. E. Serianni, Associazione Dietetica, Italiana, via dei Penitenzieri N. 13, Rome, Italy, Secretary General.

INTERNATIONAL CONGRESS ON DISEASES OF THE CHEST, Cologne, Germany, Aug. 19-23, 1956. Mr. Murray Kornfeld, 112 East Chestnut St., Chicago 11, Illinois, U. S. A., Executive Director.

INTERNATIONAL CONGRESS OF ENTOMOLOGY, Montreal, Canada, Aug. 17-25, 1956. Mr. J. A. Downes, Science Service Bldg., Carling Ave., Ottawa, Ont., Canada, Secretary.

INTERNATIONAL CONGRESS OF GASTROENTEROLOGY, London, England, July 18-21, 1956. Mr. Hermon Taylor, London Hospital, White Chapel, London E.1, England, Honorable Secretary.

INTERNATIONAL CONGRESS OF HEALTH TECHNICIANS, Maison de la Mutualite, Paris, France, June 5-8, 1956. For information address: Mr. M. H. Thoillier, 37 Rue de Monthlon, Paris 9e, France.

INTERNATIONAL CONGRESS FOR THE HISTORY OF SCIENCE, Florence and Milan, Italy, Sept. 3-10, 1956. Dr. M. L. Bonelli, Instituto di Ottica, Arcetri, Florence, Italy, Secretary-General.

INTERNATIONAL CONGRESS OF HUMAN GENETICS, Copenhagen, Denmark, Aug. 1-6, 1956. For information address: The University Institute for Human Genetics, Tagensvej 14, Copenhagen N, Denmark.

INTERNATIONAL CONGRESS OF HYDATID DISEASE, Athens, Greece, Sept. 14-18, 1956. Prof. B. Kourias, Croix-Rouge Hellenique, 1 rue Mackenzie King, Athens, Greece, Secretary-General.

INTERNATIONAL CONGRESS OF INTERNAL MEDICINE, Madrid, Spain, Sept. 19-23, 1956. Dr. J. C. De Oya and Dr. J. Gimena, Hostaleza No. 90, Madrid, Spain, Secretaries.

INTERNATIONAL CONGRESS OF INTERNATIONAL COLLEGE OF SURGEONS, Palmer House, Chicago, Illinois, U. S. A., Sept. 9-13, 1956. Dr. Max Thorek, 1516 Lake Shore Drive, Chicago, Illinois, U. S. A., Secretary-General.

INTERNATIONAL CONGRESS OF NEO-HIPPOCRATIC MEDICINE, Montecatini, Terme, Italy, May 20-22, 1956. Dr. Valente, 41 Avenue Verdi, Montecatini Terme, Italy, Secretary-General.

INTERNATIONAL CONGRESS OF PAEDIATRICS, Copenhagen, Denmark, July 22-27, 1956. Professor P. Plum, Rigshospitalet, Copenhagen, Denmark, President.

INTERNATIONAL CONGRESS OF PHYSICAL MEDICINE, Copenhagen, Denmark, August 20-24, 1956. Dr. B. Strandberg, Kobenhavns amts sygehus i Gentofte, Dept. of Rheumatology and Physical Medicine, Hellerup, Denmark, Honorable Secretary.

INTERNATIONAL CONGRESS OF RADIOLOGY, Mexico, D. F., Mexico, July 22-28, 1956. Dr. Jose Noriega, Tepic 126 (2e piso), Mexico, D. F. 7, Mexico, Secretary General.

INTERNATIONAL CONGRESS OF WORLD CONFEDERATION FOR PHYSICAL THERAPY, Hotel Statler, New York, New York, U. S. A., June 17-23, 1956. For information address: Miss Mildred Elson, American Physical Therapy Association, 1790 Broadway, New York 19, New York, U. S. A.

INTERNATIONAL GENETICS SYMPOSIUM, Tokyo and Kyoto, Japan, Sept. 6-12, 1956. For information address: Secretary, International Genetics Symposium, Science Council of Japan, Ueno Park, Tokyo, Japan.

INTERNATIONAL PHYSIOLOGICAL CONGRESS, Brussels, Belgium, July 29-Aug. 5, 1956. For information address: Prof. J. Reuse, Faculte de Medicine et de Pharmacie, 115 Boulevard de Waterloo, Brussels, Belgium.

INTERNATIONAL PROFESSIONAL UNION OF GYNECOLOGISTS AND OBSTETRICIANS, Madrid, Spain, Sept. 28-29, 1956. Dr. Jacques Courtois, 1 rue Racine, St-Germain-en-Laye (S and O), France, Permanent International Secretary-General.

INTERNATIONAL SYMPOSIUM ON VENEREAL DISEASES AND THE TREPONEMATOSES, Hotel Statler, Washington, D. C., U. S. A., May 28-June 1, 1956. For information address: Dr. Charles A. Smith, Chief, Venereal Disease Program, Division of Special Health Services, Public Health Service, Dept. of Health, Education and Welfare, Washington 25, D. C., U. S. A.

LATIN AMERICAN CONGRESS OF PHYSICAL MEDICINE, San Juan, Puerto Rico and Curacao, N.W.I., Jan. 29-Feb. 8, 1956. Dr. Cassius Lopez de Victoria, 176 East 71st St., New York 21, New York, U. S. A., Executive Director.

MEDICAL WOMEN'S INTERNATIONAL ASSOCIATION, EXTRAORDINARY GENERAL ASSEMBLY, Burgenstock, Nidwalden, Switzerland, Sept. 21-23, 1956. Dr. Janet Aitken, 30a Acacia Road, London N.W. 1, England, Secretary.

MIDDLE EAST MEDICAL ASSEMBLY, Campus, American University of Beirut, Beirut, Lebanon, April 7-9, 1956. Dr. Virgil C. Scott, American University of Beirut, Beirut, Lebanon, Chairman.

NATIONAL CONGRESS OF PEDIATRICS, Cuidad Universitaria, Mexico D.F., Mexico, May 1-5, 1956. Dr. Ignacio Avila Cisneros, Calzada de Madereros No. 240, Mexico 18, D.F., Mexico, Coordinator.

NORTH QUEENSLAND MEDICAL CONFERENCE, Cairns, North Queensland, Australia, June 25-30, 1956. Dr. W. R. Horsfall, P.O Box 672, Cairns, N.Q., Australia, Secretary.

PAN-AMERICAN ACADEMY OF GENERAL PRACTICE, San Juan, Puerto Rico and Curacao, N.W.I., Jan. 29-Feb. 8, 1956. Dr. Arturo Martinez, 54 East 72d St., New York 21, New York, U. S. A., Secretary.

PAN AMERICAN CONGRESS OF GASTROENTEROLOGY, Havana, Cuba, Jan. 20-27, 1956. For information address: Dr. Norberto M. Stapler, 1267 J. E. Uriburu, Buenos Aires, Argentine, S. A.

PAN AMERICAN CONGRESS OF OPHTHALMOLOGY, Santiago, Chile, S. A., Jan. 9-14, 1956. Dr. Rene Contardo, Huerfanos 930, Of. 74, Santiago, Chile, Secretary General.

PAN AMERICAN CONGRESS OF OTORHINOLARYNGOLOGY AND BRONCHOESOPHAGOLOGY, San Juan, Puerto Rico, April 8-12, 1956. Dr. C. E. Munoz MacCormick, Apartado 9111, Santurce 29, Puerto Rico, Secretary General.

PAN AMERICAN MEDICAL WOMEN'S ALLIANCE, Santiago, Chile, March 6-13, 1956. For information address: Dr. Eva Cutright, 458 Beall Ave., Wooster, Ohio, U. S. A.

WORLD CONGRESS ON FERTILITY AND STERILITY, Naples, Italy, May 18-26, 1956. Dr. Maxwell Roland, 114-20 Queens Boulevard, Forest Hills 75, New York, N. Y., U. S. A., Chairman. Liaison Committee.

WORLD MEDICAL ASSOCIATION, Havana, Cuba, Oct. 9-15, 1956. Dr. Louis H. Bauer, 345 East 46th St., New York 17, New York, U. S. A., Secretary-General.

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EXAMINATIONS AND LICENSURE

NATIONAL BOARD OF MEDICAL EXAMINERS

NATIONAL BOARD OF MEDICAL EXAMINERS: Various Centers. April 24-25 (Part II); June 19-20 (Parts I and II); September 4-5 (Part I). Candidates may file applications at any time but they must be received at least six weeks before the date of the examination for which application is made. New candidates should apply by formal registration; registered candidates may notify the board, indicating desired location, date and candidate number. Ex. Sec., Dr. John P. Hubbard, 133 South 36th St., Philadelphia 4.

BOARDS OF MEDICAL EXAMINERS

ALABAMA: *Examination.* Montgomery, June 19-21. Sec., Dr. D. G. Gill, State Office Bldg., Montgomery.

ARIZONA:* *Examination.* Phoenix, Jan. 18-19. *Reciprocity.* Phoenix, Jan. 21. Sec., Dr. M. R. Richter, 411 Security Bldg., Phoenix.

ARKANSAS:* *Examination.* Little Rock, June 14-15. Sec., Dr. Joe Verser, Harrisburg.

CALIFORNIA: *Examination.* Los Angeles, Feb. 27-Mar. 1. Sec., Dr. Louis E. Jones, 1020 N St., Room 436, Sacramento.

CONNECTICUT:* *Examination.* New Haven, March 12-14. Sec., Dr. Creighton Barker, 160 St. Ronan St., New Haven.

DELAWARE: *Examination.* Dover, Jan. 10-12. *Reciprocity.* Dover, Jan. 19. Sec., Dr. Joseph S. McDaniel, Dover.

DISTRICT OF COLUMBIA:* *Examination.* Washington, May 14-15. Deputy Director, Mr. Paul Foley, 1740 Massachusetts Ave., N.W., Washington.

FLORIDA:* *Examination.* Miami Beach, June 24-26. Sec., Dr. Homer L. Pearson, 901 N.W. 17th St., Miami 36.

GEORGIA: *Examination and Reciprocity.* Atlanta, June. Sec., Mr. Cecil L. Clifton, 111 State Capitol, Atlanta 3.

IDAHO: *Examination and Reciprocity.* Boise, Jan. 9-11. Exec. Sec., Mr. Armand L. Bird, 364 Sonna Bldg., Boise.

ILLINOIS: *Examination and Reciprocity.* Chicago, Jan. 24-26. Supt. of Regis., Mr. Frederic B. Selcke, Capitol Building, Springfield.

INDIANA: *Examination.* Indianapolis, June. Exec. Sec., Miss Ruth V. Kirk, 538 K. of P. Bldg., Indianapolis.

MAINE: *Examination.* Portland, Mar. 13-14. Sec., Dr. Adam P. Leighton, 192 State St., Portland.

MICHIGAN:* *Examination.* Ann Arbor and Detroit, June 13-15. Sec., Dr. E. C. Swanson, 118 Stevens T. Mason Bldg., Lansing.

MINNESOTA:* *Examination.* Minneapolis, Jan. 17-19. Sec., Dr. F. H. Magney, 230 Lowry Medical Arts Bldg., St. Paul 2.

MONTANA: *Examination and Reciprocity.* Helena, April 3. Sec., Dr. S. A. Cooney, 7 West 6th Ave., Helena.

NEBRASKA:* *Examination.* Omaha, June 18-20. Director, Bureau of Examining Boards, Mr. Husted K. Watson, 1009 State Capitol Bldg., Lincoln.

NEVADA:* *Examination and Reciprocity.* Reno, Jan. 3. Sec., Dr. G. H. Ross, 112 N. Curry St., Carson City.

NEW HAMPSHIRE: *Examination and Endorsement.* Concord, March 14. Sec., Dr. John S. Wheeler, 107 State House, Concord.

NEW JERSEY: *Examination.* Trenton, June 19-22. Sec., Dr. Patrick H. Corrigan, 28 W. State St., Trenton.

NEW YORK: *Examination.* Albany, Buffalo, Syracuse and New York, Feb. 7-10. Sec., Dr. Stiles D. Ezell, 23 S. Pearl St., Albany.

NORTH CAROLINA: *Reciprocity.* Durham, Jan. 16. *Examination.* Durham, June 18-21. Sec., Dr. Joseph J. Combs, Professional Bldg., Raleigh.

NORTH DAKOTA: *Examination.* Grand Forks, Jan. 4-6. *Reciprocity.* Grand Forks, Jan. 7. Sec., Dr. C. J. Glaspel, Box 228, Grafton.

OKLAHOMA:* *Examination.* Oklahoma City, June 5-6. Sec., Dr. E. F. Lester, 813 Braniff Bldg., Oklahoma City.

OREGON:* *Examination.* Portland, Jan. 16-17. Exec. Sec., Mr. Howard I. Bobbitt, 609 Failing Bldg., Portland.

PENNSYLVANIA: *Examination.* Philadelphia, Jan. 23-26. Acting Sec., Miss Marguerite G. Steiner, Box 911, Harrisburg.

RHODE ISLAND:* *Examination.* Providence, Jan. 5-6. Admin. of Professional Education, Mr. Thomas B. Casey, Room 366, State Office Bldg., Providence 2.

SOUTH DAKOTA:* *Examination.* Sioux Falls, Jan. 17-18. Exec. Sec., Mr. John C. Foster, 300 First National Bank Bldg., Sioux Falls.

TEXAS:* *Examination and Reciprocity.* Fort Worth, June 18-20. Sec., Dr. M. H. Crabb, 1714 Medical Arts Bldg., Fort Worth 2.

UTAH: *Reciprocity.* Salt Lake City, Feb. 21. *Examination.* Salt Lake City, July 11-13. Director, Mr. Frank E. Lees, 324 State Capitol Bldg., Salt Lake City 1.

WASHINGTON:* *Examination.* Seattle, Jan. 9-11. *Reciprocity.* Seattle, Jan. 8. Secretary, Department of Licenses, Mr. Edward C. Dohm, Olympia.

WEST VIRGINIA: *Examination and Reciprocity.* Charleston, Jan. 9-11. Sec., Dr. Newman H. Dyer, State Office Bldg., No. 3, Charleston 5.

WISCONSIN:* *Reciprocity and Examination.* Madison, Jan. 10-12; *Reciprocity,* Madison, Spring; *Reciprocity and Examination.* Milwaukee, July 10-12. Sec., Dr. Thomas W. Tormey, Jr., 1140 State Office Bldg., Madison.

WYOMING: *Examination and Endorsement.* Cheyenne, Feb. 6. Sec., Dr. Franklin D. Yoder, State Office Bldg., Cheyenne.

ALASKA:* On application. Sec., Dr. W. M. Whitehead, 172 South Franklin St., Juneau.

GUAM. *Endorsement.* Agana, Jan. 2. The Commission on Licensure will meet whenever a candidate appears or submits his credentials. Sec., Dr. John E. Kennedy, Agana.

HAWAII: *Examination.* Honolulu, Jan. 9-12. Sec., Dr. I. L. Tilden, 1020 Kapiolani, St., Honolulu.

PUERTO RICO: *Examination.* San Juan, Mar. 6-11. Sec., Dr. Joaquin Mercado Cruz, Box 3271, San Juan.

BOARDS OF EXAMINERS IN THE BASIC SCIENCES

ARKANSAS: *Examination.* Little Rock, May 4-5. Sec., Mr. S. C. Dellinger, Zoology Department, University of Arkansas, Fayetteville.

CONNECTICUT: *Examination.* New Haven, Feb. 11. Address: State Board of Healing Arts, 258 Bradley St., New Haven 10.

DISTRICT OF COLUMBIA: *Examination.* Washington, April 23-24. Deputy Director, Mr. Paul Foley, 1740 Massachusetts Ave. N.W., Washington 6.

FLORIDA: *Examination.* Miami, June 9. Sec., Mr. M. W. Emmel, Box 340, Gainesville.

IOWA: *Examination.* Des Moines, Jan. 10. Sec., Dr. Ben H. Peterson, Coe College, Cedar Rapids.

MICHIGAN: *Reciprocity.* Lansing, Jan. 10. *Examination.* Detroit and Ann Arbor, Feb. 10-11. Sec., Mrs. Anne Baker, 410 W. Michigan Ave., Lansing 15.

MINNESOTA: *Examination.* Minneapolis, Jan. 3-4. Sec., Dr. Raymond N. Bieter, 126 Millard Hall, University of Minnesota, Minneapolis.

NEBRASKA: *Examination.* Omaha, Jan. 10-11. Sec., Mr. Husted K. Watson, Room 1009, State Capitol Bldg., Lincoln 9.

NEVADA: *Examination.* Reno, Jan. 3. Sec., Dr. Donald G. Cooney, Box 9005, University Station, Reno.

NEW MEXICO: *Examination.* Santa Fe, Jan. 15. *Reciprocity.* Sec., Mrs. Marguerite Cantrell, Box 1522, Santa Fe.

OKLAHOMA: *Examination and Reciprocity.* Oklahoma City, Mar. 30-31. Sec., Dr. E. F. Lester, 813 Braniff Bldg., Oklahoma City.

OREGON: *Examination.* Portland, March 3; June 2, Sept. 8 and Dec. 1. Dr. Earl M. Pallett, Sec., State Board of Higher Education, Eugene.

RHODE ISLAND: *Examination.* Providence, Feb. 15. Admin. of Professional Regulation, Mr. Thomas B. Casey, 366 State Office Bldg., Providence.

TENNESSEE: *Examination.* Memphis, Mar. 21-22. Sec., Mr. O. W. Hyman, 62 S. Dunlap St., Memphis 3.

TEXAS: *Examination.* Galveston, Dallas, and such other locations as are warranted, April. Sec., Bro. Raphael Wilson, 407 Perry-Brooks Bldg., Austin.

WASHINGTON: *Examination.* Seattle, Jan. 4-5. Secretary, Department of Licenses, Mr. Edward C. Dohm, Olympia.

WISCONSIN: *Examination.* Madison, April 7 and Milwaukee, June 2. Final date for filing application is Mar. 30. Sec., Dr. W. H. Barber, 621 Ransom St., Ripon.

ALASKA: On application, Juneau or other towns in Territory as decided by Board. *Reciprocity.* On application. Sec., Dr. C. Earl Albrecht, Box 1931, Juneau.

*Basic Science Certificate required.

MAGAZINE–TELEVISION REPORT

The following list of current medical articles in mass-circulation magazines and forthcoming network television programs on medical subjects is published each week only for the information of readers of THE JOURNAL. *Unless specifically stated, the American Medical Association neither approves nor disapproves of the articles and programs reported.*

TELEVISION

Monday, Jan. 9

NBC-TV, 11 a. m. to 12 noon EST. "Medical and Health News with Howard Whitman," a segment of the "Home" show.

ABC-TV, 9:30 p. m. EST. "Medical Horizons" goes to the University of Colorado School of Medicine at Denver for a report on accident proneness. Presented in cooperation with the American Medical Association.

Tuesday, Jan. 10

ABC-TV, 9:30 p. m. EST. "DuPont's Cavalcade Theater" repeats "Night Call"—a teleplay about 24 hours in the life of a general practitioner.

MAGAZINES

Family Circle, January, 1956

"How to Enrich Your Husband's Life," by Mort Weisinger

Dr. Elmer Hess, President of the American Medical Association, is one of 10 authorities giving advice to housewives. Dr. Hess tells "how to help keep your husband healthy."

"I Face an Operation," by Mary Phillips

A woman facing major surgery discovers the advances that have been made in procedure, anesthetics, and postoperative care and, as a result, attains the confident attitude that reduces operating-room dangers and speeds recovery.

Reader's Digest, January, 1956

"The Miracle of Muscle," by J. D. Ratcliff

"Muscles are fabulously complicated, not yet completely understood by science, and worthy of your thoughtful care." Condensed from *Today's Health,* this article explains what is known about muscles and suggests ways to keep them in trim.

"Why Not Music Like This in All Hospitals," by William S. Dutton

In 15 Philadelphia hospitals, a music program conducted by the Gray Ladies has brought comfort and diversion to ward patients.

"Why Doctors Face So Many Lawsuits," by Louis J. Regan, M.D., LL.B.

Dr. Regan, in an article condensed from *Look,* points out that "there has been no increase in actual malpractice, although there has been a staggering increase in the number of malpractice claims." He says: "Many unjustified malpractice claims could be avoided if patients would keep in mind what results can reasonably be expected from medical treatment and obtain expert opinion before bringing suit."

"Courage Is Not a Sometime Thing," by William J. Coughlin

Doctors are interested in the physical condition of George F. Smith, the first test pilot to live after bailing out of a plane going at supersonic speed.

GOVERNMENT SERVICES

ARMY

Stepped-Up Promotions for Medical Officers.—The Army Surgeon General, Major Gen. Silas B. Hays, announces that under revised promotion policies, physicians will be eligible for temporary promotion to the grade of major, lieutenant colonel, and colonel one year sooner than other Army officers.

As a result of the policy, it is estimated that 390 medical officers will be promoted to higher grades during the period ending June 30, 1956. Consideration is also being given to more rapid promotion of lieutenants to the grade of captain.

The action gives additional recognition to the long and expensive training required of doctors before they can qualify for Army commissions. It was pointed out that these officers have at least nine years of training beyond the high school level while most other Army officers have less formal education at the time they are commissioned. With the majority of Army medical officers now serving temporary two-year periods as a result of the Doctor-Draft Act, accelerated promotions are another means of attracting career officers into the Army.

ATOMIC ENERGY COMMISSION

Research Center to Be Built at Brookhaven National Laboratory.—Lewis Strauss, chairman of the U. S. Atomic Energy Commission, announces that a medical research center, including a nuclear reactor designed specifically for medical research and treatment, will be constructed at Brookhaven National Laboratory, Upton, N. Y., at a cost of 6 million dollars exclusive of design and engineering. The new facility will house a nuclear reactor, a research hospital, an industrial medicine branch, and research divisions in medical physics, pathology, microbiology, biochemistry, physiology, and clinical chemistry.

The present medical facility at Brookhaven consists of some 20 temporary buildings which were part of Camp Upton Hospital when the site was used by the Army during World War II. The buildings have become more inadequate as well as more difficult and costly to staff and maintain. The medical reactor at Brookhaven will be one of the first two in the United States. In July, the commission announced that the University of California had filed license applications with the commission for construction and operation of a medical reactor on the campus of the University of California at Los Angeles.

Medical research and treatment with neutrons have been conducted at Brookhaven since 1951 by using the general purpose research reactor already in operation. Treatment of patients at this reactor, however, requires that other work cease during the medical run, interrupting the research programs of other laboratory departments. The new reactor, designed specifically for medical use, will make available a source of neutrons for experimental work on brain cancer, as well as a number of special short-lived radioisotopes, permitting a much wider range of medical investigation than now under way.

NAVY

Officers Commended for Mexico Flood Disaster Duty.—The Commander, Joint U. S. Military Disaster Relief Forces, in Yucatan Peninsula and Tampico, Mexico, Rear Admiral M. E. Miles, has forwarded letters of commendation to Commander Jerry J. Zarriello, M. C., and Lieut. Commander Thomas B. Murray, M. S. C., USNR, for outstanding performance of duty while attached to his staff.

Commander Zarriello, flight surgeon, was commended for outstanding professional ability, initiative, judgment and devotion to duty as an advisor and in providing medical assistance and preventive measures in those disaster areas; he was also commended for his great endurance and outstanding professional skill in applying emergency surgical and medical measures to aid about 150 injured persons, under adverse field conditions, in the isolated village of Xcalac, State of Quintana Roo, Mexico, which village had been entirely destroyed by a severe hurricane. Commander Zarriello worked without rest or professional assistance for about 24 hours in carrying out this stage of his valuable disaster relief work.

Lieutenant Commander Murray, assigned additional duty on the staff of the commander of the task group for the purpose of rendering emergency epidemic disease control measures in the flooded city of Tampico and its outlying area, was commended for outstanding professional ability, judgment, and devotion to duty in executing these preventive measures in the disaster area.

Commander Zarriello is attached to the fleet aircraft service squadron 105, U. S. Naval Station, Coco Solo, Canal Zone. Lieutenant Commander Murray is attached to the naval air station, Corpus Christi, Texas.

Personal.—Lieut. Commander Thomas R. Ulshafer and Lieut. (j. g.) Frederick J. Fuerbach were recently commissioned in the regular Medical Corps of the Navy.

VETERANS ADMINISTRATION

Work Adjustment Training.—The Veterans Administration announces that hundreds of severely disabled veterans who might still be on the sidelines have gained a new start toward independent living through its program of "work adjustment training." The program is designed to help each disabled veteran master the fundamentals of day-to-day living and working. It is not designed to train him thoroughly for a specific job; that can come later, VA said. Most work adjustment training has been provided for disabled veterans in sheltered workshops and rehabilitation centers, where they can receive the sympathetic and understanding attention necessary in their first steps of adjustment to the work-a-day world. A few vocational schools also offer this training.

The program helps the veteran acquire fundamental work capacities—such as training a double-arm amputee to manipulate his hooks in handling papers for a filing job. It helps him adjust to work activities, to feel that, despite his handicaps, he is a part of his place of work, rather than apart from it, and it helps him develop fitness for a regular program of vocational training that can follow. Through "work adjustment training," severely disabled veterans already have prepared for jobs as draftsmen, office workers, restaurant workers, leatherworkers, woodworkers, radio repairmen, printers, book-binders and many more.

PUBLIC HEALTH SERVICE

Daily Water Supplies.—More than 52 million people in communities of 25,000 and over now depend on surface sources for their daily water supplies, as compared with fewer than 40 million eight years ago, the Public Health Service said in announcing results of a nationwide inventory; however, the use of untreated water by the country's larger communities has virtually ended. Less than one per cent of the population in communities of 25,000 and over today use untreated water, the service said.

These developments provide some measure of the progress made by our cities and towns in meeting the water needs of their rapidly growing populations, Gordon McCallum, chief of the service's water supply and water pollution control program, said. The sharp increase in the number of people dependent on surface waters also points up the need for conserving our natural water supplies through water pollution control and other practicable measures.

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DEATHS

Abt, Isaac Arthur ✠ in 1948 recipient of the Distinguished Service Medal of the American Medical Association, died at his home in Chicago Nov. 22, aged 87, of heart disease. Dr. Abt was born in Wilmington, Ill., Dec. 18, 1867. After a preliminary medical course at Johns Hopkins University in Baltimore in 1889, he received his degree of doctor of medicine in 1891 from the Chicago Medical College, now known as Northwestern University Medical School. He was thereafter an intern in Michael Reese Hospital from 1891 to 1892 and subsequently did graduate work in Vienna and Berlin. From 1897 to 1901 he served as professor of diseases of children in Northwestern University Woman's Medical School and was associate professor of diseases of children in Rush Medical College from 1902 to 1908. He then became professor of pediatrics and chairman of the department from 1909 to 1939, since which time he was professor emeritus. A specialist certified by the American Board of Pediatrics in 1926, Dr. Abt held the presidency of the American Pediatric Society and in 1930 that of the American Academy of Pediatrics, of which he was a founder. He was a past-president of the Chicago Medical Society, Institute of Medicine of Chicago, Chicago Pediatric Society, and the American Association of Teachers of Diseases of Children, a member of the Central States Pediatric Society, and honorary member of the German Society of Pediatrics and the Minnesota chapter of Alpha Omega Alpha, honorary medical fraternity. In 1927 he was made a Chevalier of the Legion of Honor of France. In 1909 he helped to found the first Chicago Milk Commission, which later developed into the Infant Welfare Society. He also served for a time as district county physician and as inspector of the staff of the Chicago Health Department. From 1919 through 1935 Dr. Abt was a member of the House of Delegates of the American Medical Association and in 1911-1912 was chairman of the Section on Diseases of Children. In 1925 he presented to the House of Delegates a report on the methods of sale and promotion of proprietary infant foods that has served as a standard since that time. He planned and built the first children's hospital in Chicago (Sarah Morris, a part of Michael Reese), where he was a consultant. He was a consulting physician in diseases of children at the Children's Memorial Hospital and St. Luke's Hospital, and attending physician, diseases of children, at the Passavant Hospital. He was credited with being the first physician to administer diphtheria antitoxin in Chicago, the first to provide incubators for premature babies, and the first American pediatrician to use protein milk in the treatment of diarrhea in infants. Dr. Abt was not only an outstanding clinician but was also a great teacher. His contributions to the literature of his specialty include hundreds of articles, a book called "The Baby's Food," published in 1917, and an autobiography called "The Baby Doctor," published in 1944. His "System of Pediatrics" was an encyclopedic work. He was helpful in 1910 in founding the *American Journal of Diseases of Children* and was editor of the volume on pediatrics in the Practical Medicine series. The Isaac A. Abt Pediatric Foundation at Northwestern, to which funds have been contributed by the physician's friends in his honor, furthers pediatrics research in the medical school and finances a fellowship in the field of children's diseases. In 1931 he received an honorary degree of doctor of science from Northwestern.

Eaton, William Edward ✠ Captain, U. S. Navy, retired, Washington, D. C.; born in Newburyport, Mass., Nov. 7, 1882; Harvard Medical School, Boston, 1904; joined the U. S. Navy on March 14, 1910, as acting assistant surgeon; his first duty assignment was at the Naval Hospital, Chelsea, Mass.; during his 40 years of active service in the Medical Corps of the Navy, he landed at Vera Cruz, Mexico, with a force from the USS Utah, in 1914, in operations against Mexican forces; in 1914, served as an instructor at the Naval Medical School; in 1919 while serving as the sanitary engineer in the Republic of Haiti, set up and organized the public health service for that Republic; in June, 1935, assumed duty as executive officer of the Naval Hospital, Newport, R. I., after which he attended the senior class at the Naval War College in 1937; served as the Force Medical Officer, Destroyers Battle Force; in 1939 was ordered as medical officer in command of the Naval Hospital, Great Lakes, Ill., for which service he was awarded the Legion of Merit; was also a recipient of the Marine Corps medal, the Mexican medal, and the Haitian medal; placed on the retired list on Oct. 1, 1943, and continued on active duty; in 1946 served as a member of the Navy Regulations Board, convened to revise and rewrite Navy regulations; served as member of a board in the Bureau of Medicine and Surgery to prepare regulations implementing the Medical Service Corps, nurse corps, and the dental corps laws; in July, 1948, undertook preparation of medical department correspondence courses for the Naval Reserves; placed on inactive duty on Feb. 28, 1950; fellow of the American College of Surgeons; served on the staff of the Council on Medical Education and Hospitals, American Medical Association; died in the U. S. Naval Hospital, Bethesda, Md., Oct. 19, aged 72.

Curtis, Arthur Hale ✠ Chicago; born in Portage, Wis., May 20, 1881; Rush Medical College, Chicago, 1905; interned at the Cook County Hospital; later took post-graduate work abroad; professor of obstetrics and gynecology emeritus at Northwestern University Medical School, where he was professor and chairman of the department of obstetrics and gynecology for many years; specialist certified by the American Board of Obstetrics and Gynecology; member of the House of Delegates of the American Medical Association in 1932, 1933, and 1934 and chairman, Section on Obstetrics, Gynecology and Abdominal Surgery, 1926-1927; member of the American Gynecological Society, of which he was at one time secretary and president; past-president of the Chicago Gynecological Society; member of the Nu Sigma Nu, Chicago Pathological Society, and the Central Association of Obstetricians and Gynecologists; fellow of the American College of Surgeons; served overseas during World War I; for many years chief of service, obstetrics and gynecology, at the Passavant Memorial Hospital; at one time head football coach at the University of Kansas in Lawrence and the University of Wisconsin in Madison, where in 1935 he was awarded the honorary degree of doctor of laws; author of "Textbook of Gynecology" and "Gynecological Diagnosis"; editor of "Obstetrics and Gynecology"; died at his home in Evanston, Ill., Nov. 13, aged 74, of myocardial infarct.

Beall, Walter C., Denver; Medical College of Indiana, Indianapolis, 1901; an associate member of the American Medical Association; died in St. Luke's Hospital Sept. 14, aged 82, of pernicious anemia and arteriosclerosis.

Beeler, Thomas Taylor Jr. ✠ Manchester, N. H.; University of Oklahoma School of Medicine, Oklahoma City, 1937; specialist certified by the American Board of Surgery; fellow of the American College of Surgeons; lieutenant colonel, Medical Corps, U. S. Army, from 1940 to 1953 and was awarded the Bronze Star medal with Oak Leaf Cluster; on the staff of the Veterans Administration Hospital; died Oct. 29, aged 44.

Belt, Leroy Lorin, Spring Valley, Calif.; Western Reserve University School of Medicine, Cleveland, 1916; served during World War I; on the staff of the La Mesa (Calif.) Community Hospital and Paradise Valley Sanitarium and Hospital in National City; died Sept. 23, aged 63, of coronary thrombosis.

Blanchar, William Otis, Los Angeles; Chicago Homeopathic Medical College, 1903; College of Physicians and Surgeons, Los Angeles, 1913; served in the regular Army; died Nov. 6, aged 81, of arteriosclerosis.

Boehmer, Arthur Clarence ✠ Lodi, Calif.; University of Illinois College of Medicine, Chicago, 1914; member of the Industrial Medical Association; for many years director and president of the San Joaquin local health district; for 25 years physician for

✠ Indicates Member of the American Medical Association.

the Lodi Union High School football team; member of the board of directors of the Lodi Memorial Hospital; died in Truckee Oct. 7, aged 64, of cerebral vascular accident and diabetes mellitus.

Bostick, Alonzo E. ✦ Iuka, Miss.; Memphis (Tenn.) Hospital Medical College, 1907; died Oct. 16, aged 84, of coronary occlusion.

Brabham, Vance Wells ✦ Orangeburg, S. C.; University of Maryland School of Medicine, Baltimore, 1905; died Aug. 28, aged 74, of portal cirrhosis.

Brewer, John F. ✦ North Little Rock, Ark.; Memphis (Tenn.) Hospital Medical College, 1901; local surgeon for the Rock Island Railroad; died in St. Vincent's Infirmary, Little Rock, Oct. 19, aged 80, of cerebral hemorrhage.

Brooks, Osceola Judkins ✦ Huntsville, Ala.; Medical Department of Tulane University of Louisiana, New Orleans, 1893; past-president of the Madison County Medical Society; on the staff of the Huntsville Hospital, where he died Oct. 3, aged 83, of coronary thrombosis.

Browning, Arthur Wolfe ✦ Elloree, S. C.; Baltimore Medical College, 1897; member of the American Academy of General Practice; died in the Orangeburg (S. C.) Regional Hospital Sept. 28, aged 77, of cerebral thrombosis.

Buchanan, William Paul ✦ Detroit; University of Toronto Faculty of Medicine, Toronto, Canada, 1924; member of the American Academy of General Practice; on the staff of the Florence Crittenton Hospital and Mount Carmel Hospital; died Oct. 16, aged 57, of cancer.

Charters, John Henry ✦ Fenton, Mich.; Detroit College of Medicine, 1897; died Oct. 5, aged 85.

Cobb, Donnell Borden ✦ Goldsboro, N. C.; University of Pennsylvania School of Medicine, Philadelphia, 1921; member of the founders group of the American Board of Surgery; past-president of the Medical Society of the State of North Carolina; vice-president of the Southern Surgical Association; fellow of the American College of Surgeons; on the staff of the Goldsboro Hospital; died Nov. 12, aged 57, of coronary thrombosis.

Corbett, Henry Clay ✦ Arlington, Va.; Columbian University Medical Department, Washington, D. C., 1883; member of the Medical Society of Virginia; died in Alexandria Oct. 7, aged 98, of heart disease and arteriosclerosis.

Davidson, Carlton Harold, Washington, D. C.; Western Pennsylvania Medical College, Pittsburgh, 1907; veteran of the Spanish-American War and World War I; for many years associated with the Veterans Administration; died Sept. 27, aged 76, of coronary occlusion.

Denton, Marvin, Oneonta, Ala.; University of Nashville (Tenn.) Medical Department, 1905; member of the Medical Association of the State of Alabama; died Oct. 17, aged 75, of coronary occlusion.

Downing, Richard Ray, Fort Wayne, Ind.; Indiana University School of Medicine, Indianapolis, 1953; interned at St. Joseph Hospital; died Sept. 19, aged 31.

Drinkwater, Ray Lawrence, Denver; University of Colorado School of Medicine, Denver, 1913; past-president of the Colorado State Division of Public Health; served during World War I; formerly on the faculty of his alma mater; died Sept. 23, aged 71, of gastric hemorrhage.

Ferguson, Joseph Hart, Ravenswood, W. Va.; University of Louisville (Ky.) Medical Department, 1911; served overseas during World War I; died Oct. 12, aged 76, of bronchopneumonia and cerebral thrombosis.

Finney, Margaret Hammond, Lincoln, Neb.; the Hahnemann Medical College and Hospital, Chicago, 1915; died Aug. 11, aged 76, of coronary thrombosis.

Flagge, Philip Wesley ✦ Fairhope, Ala.; Washington University School of Medicine, St. Louis, 1902; specialist certified by the American Board of Internal Medicine; fellow of the American College of Physicians; member of the American Heart Association and the Medical Society of the State of North Carolina; died in Alexandria, Va., Nov. 5, aged 79, of cerebral thrombosis.

Guild, Frederick Washburn ✦ Fort Lauderdale, Fla.; University of Vermont College of Medicine, Burlington, 1909; formerly practiced in Grafton, Mass.; served on the staff of the Milford (Mass.) Hospital and the Hahnemann Hospital in Worcester, Mass., where he died Sept. 30, aged 70, of bronchopneumonia.

Hartt, Percy Perley, Baltimore; College of Physicians and Surgeons, Baltimore, 1913; for many years practiced in Ishpeming, Mich.; died Oct. 24, aged 67, of myocarditis.

Higinbotham, Charles John ✦ Pine Bluff, Ark.; the Hahnemann Medical College and Hospital, Chicago, 1907; served in France during World War I; died in the Veterans Administration Hospital, Little Rock, Sept. 21, aged 76, of coronary thrombosis.

Hixson, Arthur Handley ✦ Hawthorne, Calif.; Rush Medical College, Chicago, 1914; associated with the Hawthorne Community Hospital, where he died Sept. 16, aged 71, of coronary disease.

Hogans, Sterling Franklin, Charlotte, N. C.; Meharry Medical College, Nashville, Tenn., 1924; died in Royal Oak, Mich., Sept. 19, aged 57.

Hohn, Fred Julius ✦ Saginaw, Mich.; Michigan College of Medicine and Surgery, Detroit, 1904; at one time practiced in Frankenmuth, where he was postmaster and health officer; on the staff of St. Luke's Hospital; died Nov. 6, aged 76, of cancer of the colon with metastasis.

Hooper, Joel Samuels ✦ Camden, N. Y.; University of Buffalo School of Medicine, 1901; member of the Oklahoma State Medical Association; served during World War I; died Oct. 18, aged 81, of chronic myocarditis.

Jeffers, Dean Henry ✦ Lake Geneva, Wis.; University of Michigan Medical School, Ann Arbor, 1916; died in St. Mary's Hospital, Rochester, Minn., Sept. 23, aged 69, of carcinoma of the rectum.

Lendrum, Birney Alexander, Oakland, Calif.; University of California Medical School, San Francisco, 1902; died in Fawn Lodge, Trinity County, Oct. 6, aged 80, of coronary thrombosis.

Lewis, George Vincent, Manitou Springs, Colo.; Washington University School of Medicine, St. Louis, 1919; member of the founders group of the American Board of Surgery; formerly on the faculty of the University of Arkansas School of Medicine, Little Rock; past-president of the Pulaski County (Ark.) Medical Society; served on the staffs of the St. Vincent Infirmary and the Missouri Pacific Hospital in Little Rock; died Oct. 16, aged 59, of acute pancreatitis.

McBee, Thomas Judson ✦ Morgantown, W. Va.; College of Physicians and Surgeons, Baltimore, 1905; specialist certified by the American Board of Urology; member of the American Urological Association; served during World War I; on the staff of the Monongalia General Hospital; died Oct. 28, aged 75, of chronic nephritis.

Mantz, Eli Sylvester ✦ Bethlehem, Pa.; Hahnemann Medical College and Hospital of Philadelphia, 1899; on the staff of St. Luke's Hospital, where he died Nov. 1, aged 82, of arteriosclerotic heart disease and nephrosclerosis.

Meyer, Nathan Nissau, Lakeland, Fla.; University of Wooster Medical Department, Cleveland, 1912; member of the Ohio State Medical Association; formerly practiced in Youngstown, Ohio; died in the Morrell Memorial Hospital Sept. 19, aged 65, of arteriosclerotic heart disease.

Miller, Charles Melbourne ✦ Oakley, Kan.; Kansas City (Mo.) Medical College, 1905; veteran of the Spanish-American War and World War I; formerly member of the state legislature; for many years a member of the city council; died Oct. 16, aged 77, of cerebral hemorrhage.

Miller, Daniel Burton ✦ Terre Haute, Ind.; Rush Medical College, Chicago, 1903; on the staff of St. Anthony's Hospital; for many years surgeon for the Chicago, Milwaukee and St. Paul Railroad; died Oct. 18, aged 79, of coronary thrombosis.

Mitchell, James Archie, West Palm Beach, Fla.; University of the City of New York Medical Department, New York City, 1894; died Sept. 20, aged 84, of coronary occlusion, hypertension, and pulmonary tuberculosis.

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Monash, David ✠ Chicago; Columbia University College of Physicians and Surgeons, New York City, 1893; fellow of the American College of Surgeons; served on the staff of the Mercy Hospital; died Nov. 5, aged 84, of a heart attack.

Moore, Edward Joseph ✠ Merion Station, Pa.; Jefferson Medical College of Philadelphia, 1934; served during World War II; on the faculty of his alma mater; on the staff of the Bryn Mawr (Pa.) Hospital and the Jefferson Hospital, where he died Sept. 28, aged 50, of acute coronary thrombosis.

Mulligan, Raymond Francis ✠ Covington, La.; Louisiana State University School of Medicine, New Orleans, 1948; interned at the Rhode Island Hospital in Providence; formerly an officer in the Medical Corps of the U. S. Naval Reserve; died in a plane accident Oct. 14, aged 31.

Nelson, Roland Clifford ✠ Beverly Hills, Calif.; University of Illinois College of Medicine, Chicago, 1930; interned at the Los Angeles County General Hospital; member of the American Academy of General Practice; served during World War II; on the staffs of the California Hospital in Los Angeles and the Santa Monica (Calif.) Hospital; died Oct. 31, aged 53, of coronary occlusion.

Odell, Thomas Allen ✠ Indianapolis; Southern Medical College, Atlanta, 1894; died in Greencastle Oct. 9, aged 90.

O'Gorman, Michael William, Nutley, N. J.; Columbia University College of Physicians and Surgeons, New York, 1895; for many years chief of the division of child hygiene in Jersey City; died in St. Mary's Hospital in Passaic Nov. 6, aged 83.

Ohrwall, Harold William Augustus, Hollister, Calif.; Cooper Medical College, San Francisco, 1898; died in Watsonville Sept. 29, aged 91, of senility.

Osburn, John Nelson Neill ✠ Balboa, Calif.; University of Maryland School of Medicine, Baltimore, 1909; member of the American Academy of Ophthalmology and Otolaryngology; specialist certified by the American Board of Ophthalmology; on the staff of St. Joseph's Hospital in Orange; for many years on the staff of the Santa Fe Coast Line Hospital in Los Angeles; died Oct. 11, aged 69, of cerebrovascular accident.

Outler, James Samuel, Augusta, Ga.; Meharry Medical College, Nashville, Tenn., 1923; died Sept. 11, aged 61, of myocardial infarction and arteriosclerotic heart disease.

Peterson, Clark Kimball ✠ Pacific Grove, Calif.; Tufts College Medical School, Boston, 1905; for many years practiced in Lakeville, Conn., where he was health officer and medical examiner; served as chief of staff of Sharon (Conn.) Hospital; died Oct. 4, aged 76, of bronchopneumonia, advanced Parkinsonism, and cerebral arteriosclerosis.

Phillips, Samuel Hewes ✠ St. Albans, W. Va.; University of Virginia Department of Medicine, Charlottesville, 1908; served during World War I; died Nov. 5, aged 75, of tuberculosis.

Pritchard, George Littleton ✠ Black Mountain, N. C.; University College of Medicine, Richmond, 1913; died in St. Joseph's Hospital, Asheville, Oct. 14, aged 65, of coronary arteriosclerosis.

Randall, George Merrill, St. Petersburg, Fla.; Medical School of Maine, Portland, 1889; died in the Veterans Administration Center Sept. 20, aged 92, of hypostatic pneumonia and arteriosclerosis.

Rice, Herbert R. ✠ Flagstaff, Ariz.; University of Minnesota Medical School, Minneapolis, 1930; interned at the Minneapolis General Hospital; served during World War II; commander in the U. S. Naval Reserve; on the staff of the Flagstaff Hospital; accidentally drowned while vacationing in Phoenix Oct. 10, aged 50.

Scott, Elmer Albert, St. Petersburg, Fla.; Dartmouth Medical School, Hanover, N. H., 1897; Bellevue Hospital Medical College, New York City, 1898; died June 11, aged 85, of generalized arteriosclerosis and pneumonia.

Sheffield, Homer H., Pasadena, Calif.; College of Physicians and Surgeons of San Francisco, 1901; died in San Gabriel, Calif., Oct. 17, aged 86, of coronary thrombosis and arteriosclerotic heart disease.

Shipley, James Everett ✠ Major, U. S. Army, retired, Oklahoma City, Okla.; Northwestern University Medical School, Chicago, 1944; interned at St. Joseph Hospital, Chicago, where he was later a resident in surgery; formerly a resident in orthopedic surgery at the University and St. Anthony's hospitals; served during World War II; later transferred to the regular Army and then retired; died in the University Hospital Oct. 3, aged 36, of pneumonia and metastatic pulmonary osteogenic sarcoma.

Smallwood, Walter Charles ✠ Long Beach, Calif.; Stanford University School of Medicine, San Francisco, 1916; specialist certified by the American Board of Internal Medicine; fellow of the American College of Physicians; from 1942 to 1947 associate clinical professor of medicine at University of Southern California School of Medicine, Los Angeles; on the staffs of the Long Beach Community, Seaside Memorial, and St. Mary's Long Beach hospitals; served during World War I; died Oct. 25, aged 65, of pulmonary emphysema.

Smith, William Douglas ✠ Senatobia, Miss.; Vanderbilt University School of Medicine, Nashville, Tenn., 1894; past-president of the Tate County Medical Society; served as health officer of Tate County; died Oct. 28, aged 82.

Stevens, James Henry, Jonesboro, Ark.; Barnes Medical College, St. Louis, 1906; on the staff of St. Bernard's Hospital; died Oct. 3, aged 71, of coronary occlusion.

Stone, Lee Alexander, Madera, Calif.; Kentucky University Medical Department, Louisville, 1902; an associate member of the American Medical Association; for many years county health officer; veteran of the Spanish-American War and World War I; died in the Veterans Administration Hospital, Fresno, Nov. 5, aged 76, of right cerebral thrombosis.

Taylor, Benjamin F., Marked Tree, Ark.; Barnes Medical College, St. Louis, 1898; died in the Baptist Hospital, Memphis, Tenn., Sept. 27, aged 83, of uremia.

Tibbels, Charles David ✠ Black Rock, Ark.; Kansas City (Mo.) College of Medicine and Surgery, 1916; also an ordained minister; past-president of the Northeast Arkansas Medical Society and the Lawrence County Medical Society; died Oct. 23, aged 76.

Wahrhaftig, Myer Jacob ✠ Oakland, Calif.; Oakland College of Medicine and Surgery, 1917; died in the Samuel Merritt Hospital Sept. 15, aged 67, of subarachnoid hemorrhage.

Westervelt, J. C., Shelbyville, Ill.; Bennett College of Eclectic Medicine and Surgery, Chicago, 1877; for many years assistant secretary of the state board of health; for four terms mayor of Shelbyville; served as city health officer; a director of a savings and loan association of which he was at one time president; on the staff of the Shelbyville County Memorial Hospital; died Oct. 29, aged 100, of arteriosclerotic heart disease.

Westcott, Leo Enos, Kalamazoo, Mich.; Detroit College of Medicine and Surgery, 1914; specialist certified by the American Board of Internal Medicine; life member of the American College of Physicians; past-president of the Kalamazoo Academy of Medicine and the Kalamazoo County Cancer Society; served during World War I; on the staffs of the Borgess Hospital and the Bronson Hospital, where he died Nov. 6, aged 69, of general arteriosclerosis and cerebral hemorrhage.

Williams, J. Maxwell ✠ Tampa, Fla.; Tulane University of Louisiana School of Medicine, New Orleans, 1940; interned at the Charity Hospital, New Orleans, where he served a residency; formerly a resident at the Johns Hopkins Hospital in Baltimore, where he died Sept. 25, aged 39.

CORRECTION

Rosenblate, Adolph Jan.—It was stated that Dr. Adolph Jan Rosenblate (THE JOURNAL, Nov. 26, page 1322), was a graduate of the University of St. Vladmira Faculty of Medicine, Kiev, Russia, in 1928. The name of the school was changed in 1917 to Kiever 1st Medical Institute. The institute is located in Kiev, the capital of the Ukrainian Soviet Socialist Republic.

FOREIGN LETTERS

CANADA

Disability Allowances.—In 1954 the Parliament of Canada authorized financial assistance for permanently and totally disabled persons incapable of rehabilitation. The costs of assistance were to be shared equally by the federal and provincial governments and up to $40 a month was to be provided for each eligible person. All 10 Canadian provinces have now started their programs to implement this legislation. Criteria for permanent and total disability are severe, and emphasis is laid on rehabilitation where there is any hope of restoring function. The mechanism for assessing candidates for financial assistance from the medical standpoint is as follows: Applicants are first seen by their regular physician, who fills in a comprehensive medical form that is designed to give a clear picture of the functional loss due to mental or physical disability and, when completed, is passed on to a medical review board composed of a physician and a social worker representing the provincial government and a physician representing the federal government. The board may call for specialist help if needed, but it does not usually see or examine the patient, hence the need for a complete clinical report by the patient's physician. It may recommend acceptance, rejection, deferment, or reference to the rehabilitation services in the province. In the last case, the board does not actually prescribe rehabilitation but leaves assessment to rehabilitation assessment teams located in hospitals and rehabilitation centers.

It is inevitable that a scheme of this sort should have teething troubles. One complaint made by the medical profession has been of inadequate preliminary screening in some provinces. In some areas applicants who are obviously unsuitable have been reaching the physicians' offices, there to be turned away with some hard feelings. In other areas, however, screening has been good, and over 70% of applicants are reported to have been accepted. The second grievance has been the length of the form to be filled in. Whereas some provinces are prepared to pay the physician for his time and trouble, others have apparently expected to get this service free. To smooth out the workings of this program, a committee has been set up by the Canadian Medical Association. This committee is in close contact with the federal medical officer responsible for the program, and it is probable that, when the work is reviewed at the end of the first year, its unsatisfactory features can be dealt with. Perhaps the most encouraging feature of the program is the emphasis on rehabilitation. Nobody is to be written off as a total economic loss to the community unless the possibilities for restoration of function have been exhausted.

Good Patient Care.—As a timely reminder of the primary purpose of a hospital, the theme of the recent annual convention of the Ontario Hospital Association was "Good Patient Care Our Constant Aim." Two persons at this convention made the headlines, sharply criticizing certain aspects of the hospital system. The first blast came from the mayor of the city of Hamilton, who had been asked to speak from the patient's point of view in a panel discussion entitled "Let's Have a Look at Patient Care." Although Mayor Jackson has never been a hospital patient, some of his remarks were not without foundation. He said that hospital beds are cluttered up with persons who should not be there but in the care of their relatives or in other types of institutions. This is not a reflection on the hospital as much as on filial piety. He also complained that little was done to allay the apprehension of patients entering the hospital, to make them feel at home, or to explain to them hospital routine and the object of the diagnostic tests they were undergoing. He deplored the continued building of hospitals in noisy areas on busy streets. Hospitals should be at least 200 yards back from the road. He also suggested that interesting paintings on walls and ceilings of wards might give bored and helpless patients something to stare at.

The second critical paper, entitled "Psychiatric Problems in Hospitals," was read by Dr. D. G. McKerracher, president of the Canadian Psychiatric Association, whose chief target was the mental hospital. While praising the efforts of some devoted staff members, he said that the mental hospitals had made little progress in the last century beyond changing their name from asylum to hospital. Constantly and intolerably overcrowded, and usually located in remote areas far from medical centers, they were often hospitals only in name. The speaker blamed public attitudes for much of the trouble. The public still believes that mental illness is shameful or disgraceful and regards discharge from a mental hospital as a rare event. He advocated the treatment of mental illness in wards of general hospitals as far as possible, with mental hospitals for the more difficult chronic cases. The mental hospitals should be close to general hospitals, perhaps even as a 300-bed wing of the latter, with emphasis constantly on successful therapy and with the support of an accepting and interested community. As regards patients in general hospitals, it is essential to indoctrinate the staff with the idea that all illness has associated emotional problems, which need understanding and help by hospital personnel.

Adenoidal-Pharyngeal-Conjunctival Virus.—Members of the adenoidal-pharyngeal-conjunctival (APC) group of viruses, recognized in the United States, have recently made their appearance in Canada. A group of workers in the University of Toronto, engaged in research on viral diseases of the eye, have identified type 3 APC virus in eye washings obtained from seven patients involved in last winter's epidemic of follicular conjunctivitis and keratitis. The strain of virus was isolated and the disease was reproduced in a human volunteer by inoculation of tissue-culture fluid into the conjunctival sac. In a further communication (*Canad. M. A. J.* **73**:864, 1955) the same group reports an epidemic of pharyngeal-conjunctival fever in Ontario in August, with fever, preauricular adenopathy, pharyngitis, follicular conjunctivitis, and corneal opacities in children and adults who had used swimming pools over a widely scattered area. Children were less severely affected than adults, few having corneal opacities, but catarrhal otitis media was a complication in 42 of 104 cases in children. Viral studies in progress suggest that the epidemic is also due to type 3 APC virus, and epidemiological studies show that, as in the 1954 epidemic in Washington, D. C., transmission has been either through contact at the swimming pool or by contact within the family.

Antibiotic-Resistant Organisms in Cheese.—When Micrococcus and Streptococcus organisms resistant to antibiotics are encountered in a patient previously treated with these drugs, or with a history of hospitalization, the cause of the situation is clear, but there is an increasing number of patients infected with antibiotic-resistant organisms from whom no such history is obtainable. Thatcher and Simon (*Canad. J. Pub. Health* **46**:407, 1955) suggest that the resistant organisms may in some cases have been conveyed to the household in cheese. They purchased 100 specimens of cheese from retail stores in Canada, isolated Micrococcus and Streptococcus organisms from these, and determined the resistance of the organisms to antibiotics. They found that the commonest resistances were to penicillin and dihydrostreptomycin, the two antibiotics most commonly administered to cattle for control of bovine mastitis. No less than 15% of micrococcic and 67% of streptococcic cultures were resistant to penicillin. Food contaminated with such organisms may well be contributing to the severity of the problem of human infections with resistant strains of Micrococcus and Streptococcus organisms.

The items in these letters are contributed by regular correspondents in the various foreign countries.

DENMARK

Reorganization of Hospital Services.—In 1953 the Danish public health service and the Danish Medical Association appointed a committee to investigate the future optimal size of hospital departments, with special reference to the medical and surgical departments, and the most suitable organization of hospital medical staffs. Their report (*Ugeskrift for læger*, Aug. 23) states that between 1930 and 1954 the number of hospital departments for diseases of the ear, nose, and throat has risen in the provinces from 1 to 19 and for diseases of the eye from 0 to 14. The number of hospital beds for surgical cases has been doubled in the same period. The expansion of certain hospital departments has been so great and work in them so intensified that their chiefs have had great difficulties in giving personal attention to each patient, to their subordinate staff, and to research, current medical literature, and medical meetings. Another obstacle to maintaining close contact with each patient is the comparatively rapid turnover of patients in the hospital. It is suggested that a purely surgical hospital with only one chief, unaided by a highly qualified second-in-command chief, should not have over 80 beds and that the number of beds should not exceed 60 in hospitals specializing in neurosurgery or thoracic surgery. The objection that so small a hospital would not have a great enough variety of cases for teaching purposes can be met by an increase in turnover. On the organization of hospital medical staffs, the report says that with so few senior appointments and so many junior or subordinate appointments the prospects of promotion are relatively poor. The obvious remedy for this state of affairs is to create more senior appointments. It is also suggested that scientific, clinical research be encouraged in the provincial hospitals, and it is noted as a promising sign of the times that, of late, about one-third of the scientific papers submitted to the journal by the Danish Medical Association were of provincial origin. Another recommendation was that an adequate supply of secretarial aid be provided to relieve the medical hospital staff as much as possible of the task of filling in forms.

Prostatovesiculitis.—Abrahamsen and Madsen in *Ugeskrift for læger* for Aug. 4, reported on a series of 140 patients with prostatovesiculitis. They have learned to challenge the validity of three teachings hitherto regarded as axiomatic: that this disease is comparatively rare, that it is due to gonorrhea in most cases, and that its treatment requires the skill of a specialist. The alleged rarity of the disease may in part reflect lack of interest in it, and it is possible that the rise in the number of cases reported from the authors' hospital (from 15 in 1949 to 41 in 1954) may have come about because some cases were formerly overlooked. As for the part played by gonorrhea, smears and cultures of the urethral discharges of 129 patients yielded gonococcus organisms in only 4. In the entire series, however, 42 gave a history of gonorrhea. It is therefore conceivable that about a third of these patients had developed their prostatovesiculitis as a sequel to inadequate treatment of their gonorrhea, but this is only a speculative conclusion. While syphilis was rare in this series (5 patients), 22 patients had urographic and cystographic evidence of calculi in the prostate or upper urinary tract. There were also 16 patients with a history of stricture of the urethra. Habitual constipation was complained of by 31 patients, and an influenza-like attack occurred just before the prostatovesiculitis developed in 35 cases. A preliminary examination in some urologic hospital was recommended, but, once the correct diagnosis is made and the necessary instructions for treatment have been given, the general practitioner is quite capable of giving the prostatic massages found to afford some relief. Successful treatment requires persistence on the part of both physician and patient, and relapses are common. Of 24 patients reexamined three to five years after treatment was started, 9 were no better, 11 were improved, and only 4 were symptom-free. Chemotherapy and antibiotics are recommended only after effective drainage has been established, and even then with discrimination.

Prognosis in Cerebral Apoplexy.—Dr. Erik Skinhöy (*Nordisk medicin*, Aug. 25) has examined the records of 1,000 patients with cerebral apoplexy. The sex of the patient did not influence the case fatality rate (about 44%), but the patient's age did: under the age of 50 years it was 43% and over 80 years it was 58%. Comparatively young patients showed, however, a high case fatality rate, presumably because their apoplexy was often complicated by chronic nephritis and hypertension. Whether the patient had had a previous attack of apoplexy did not affect the rate. The prognosis was comparatively good when the patient's temperature was normal (case fatality rate 38%), whereas it was not good when the temperature was subnormal (case fatality rate 78%) and it was poor in the presence of fever (case fatality rate in a series of 125 patients 100%). Bad prognostic signs were Cheyne-Stokes respiration and cyanosis indicative of a failing heart. Underweight patients fared slightly worse than overweight patients (case fatality rate 45 and 42% respectively). The 318 patients with loss of consciousness showed a case fatality rate of 74%. Involvement of the lower limbs impaired the prognosis, probably because in most patients it was associated with damage at a higher level also. Among the patients rallying during the first 24 hours of an attack, the case fatality rate was under 20%.

ENGLAND

Injection of Drugs into Brain.—Dr. S. Sherwood has examined the response of psychotic patients to drugs injected into the ventricles of the brain (*Proc. Roy. Soc. Med.* **48**:853, 1955). Injections were given at first with sharp needles through the scalp and previously made frontal bur holes. Later they were given with fine hypodermic needles through the scalp and the rubber bung of a cannula screwed into the frontal bone. The dose of drug, which was dissolved in Tyrode's solution, was calculated as the proportion of the systemic dose that would be contained in the ventricular fluid if the distribution after systemic injection were even throughout the body. All patients were chronic psychotics who had been ill for 3 to 25 (average, 11) years. The effects of the injections were observed in some patients over a period of two years. The observations were controlled with Tyrode's solution and followed up with extensive electroencephalographic recordings. Epinephrine in doses of 5 to 250 mcg. produced a general relaxation and lowering of muscular tone, a transient flush, warming of the extremities, sweating, and drowsiness. If no alpha rhythm were present in the control electroencephalogram after the injection of epinephrine, it appeared within a few minutes, and, if it were originally present in the control, it became enhanced. The electroencephalographic record was similar to that occurring in typical light sleep. Atropine in doses of 250 to 500 mcg. produced an increase in spontaneous movements of a relaxed kind. Methantheline and Pro-Banthine, in addition to an atropine-like effect, produced increased activity, and even agitation, and a change in the number of alpha frequencies of the electroencephalogram. Cholinesterase produced flushing and improvement in the condition of catatonic patients, who calmed down, became cooperative, and spoke rationally. The alpha rhythm in the electroencephalogram was greatly enhanced. Pentamethonium and gallamine, which are muscle relaxants, had a similar action. After the administration of serotonin (5-hydroxytryptamine), the patients became pale and perspired, were active or restless, talked readily, and, after several weeks, showed clinical improvement. They became employable and interested, improved their personal habits and appearance, and spoke more rationally. The electroencephalogram showed an increase in alpha amplitude, but not frequency, and a stabilization of the frequency with clinical improvement. Complications included infection of the spinal fluid and epileptic seizures due to puncture of the choroid plexus or a branch of the anterior cerebral artery. Cholinesterase had the most marked effect on abnormal thought processes and hallucinations; methantheline increased activity; the effect of serotonin stands between that of these two agents. Acetylcholine caused exacerbation of the patient's condition.

When Is a Drug Not a Drug?—Regulations 16 and 17 of the National Health Service Regulations, 1948, provide that if a physician prescribes under the National Health Service preparations that are not drugs or medicines and therefore outside the

scope of the act, the executive council may recover their cost from him. If he challenges their action, the matter may be referred to the local medical committee, with the possibility of appeal to referees. In 1950 decisions were made on whether various borderline preparations should be classified as foods, toilet preparations, or drugs. A committee was appointed to classify substances as foods or drugs, and the report was published. Further reports were made on the classification of toilet preparations and antiseptics and circulated to physicians. The committee recommended that disinfectants should be regarded as drugs only when they are ordered in such quantities and with such directions as are appropriate for the treatment of an individual patient. Disinfectants are not considered as drugs if they are to be used for general hygienic purposes; thus saponated cresol solution may be prescribed for dressing a wound but not to disinfect the bath. Three test cases have come before the referees. A physician prescribed sulfur soap for seborrheic dermatitis. The executive council disallowed this as a free prescription item, and the physician appealed to the local medical committee, which upheld the decision. The physician then appealed to the referees. His argument was that a London dermatologist had prescribed sulfur soap for the patient. The referees decided that sulfur was a drug but soap was not and that therefore sulfur soap was not a drug. Another physician prescribed an antiseptic for an irritating skin lesion; it was the only preparation that relieved the patient. Curiously, though this therapy was almost certainly of a psychological nature, the referees allowed the claim. The case for sulfur soap as a therapeutic agent was much stronger, but the claim failed. Another physician prescribed a protein hydrolysate for a patient suffering from ulcerative colitis, with profuse diarrhea and malnutrition. This was disallowed by the executive council and by the referees. The physician's claim was upheld by a specialist who had seen the patient, but the referees held that it was not for specialists to advise on what executive councils could or could not provide under the National Health Service Act. These bureaucratic anomalies are frustrating for conscientious physicians trying to do the best for their patients. The thought that must be uppermost in their minds is not the value of the preparation to the patient but the opinion of the executive council on its validity as a free prescription item.

Nephrosis Treated by Malaria.—Gairdner and Shute have reported on patients with nephrosis in whom remissions have been induced by infecting the patient with malaria of the benign tertian variety by means of mosquito bites (*Lancet* **2**:946, 1955). A total of 65 patients was treated, 51 with "pure nephrosis" and 14 with nephritic nephrosis. The malarial attack was cut short with Proguanil. If a diuresis began any time after the onset of the malarial pyrexia, and up to a week after the end of the pyrexia, it was ascribed to the malaria. A complete remission was defined as loss of all edema, sustained for at least three months, and a partial remission as one where the loss of edema, although substantial, was either incomplete or was not sustained for three months. Complete remission was obtained in 14 of the patients with pure nephrosis, and 12 of these remained well within follow-up periods of up to six years. Partial remission occurred in 11 of the patients with pure nephrosis and in 5 of the nephritic nephrosis patients. The remaining 35 patients showed no remission. Most of the patients tolerated the treatment fairly well, although malaria was thought to have contributed to the death of one patient. Anemia developed in a large proportion of the patients with pure nephrosis. The plasma cholesterol level fell to normal levels within two weeks, and the gamma globulin, typically depressed in nephrosis, rose to normal levels. Proteinuria usually diminished sharply as diuresis set in. When remissions induced by malaria were compared with those induced by other means, the clinical and chemical abnormalities were essentially the same. In the malaria-induced remissions, however, the cholesterol level fell steadily from the onset of the pyrexia. The authors concluded that, while the cause of nephrosis remains obscure and treatment is empirical, malaria therapy is of value.

Effects of Employment of Pregnant Women.—For women having their first babies, gainful employment, in the first half of pregnancy if not throughout, is common. The state encourages married women to work by giving them preferential tax relief. Many married women of all ages with children work in factories. Dr. Alice Stewart has investigated the effect of employment of the mother on the health of the baby (*Brit. J. Prev. & Social Med.* **9**:159, 1955). She examined the records of 1,318 single first births and correlated these with the occupation and social position of the mother. The perinatal mortality and incidence of prematurity were greater in the infants of mothers who worked during pregnancy than in those of mothers who were housewives. The perinatal death rate increased with the time spent working in pregnancy. In infants born of housewives it was 2.8%. This rose to 4.9% if the mothers were employed for less than 28 weeks of the pregnancy and to 7.5% if they worked for more than 28 weeks. The incidence of prematurity in the same groups was 4.7%, 8.4%, and 11.1% respectively. There was no significant difference in the incidence of toxemia of pregnancy and the frequency of instrumental delivery in the three groups. The perinatal death rate and the incidence of prematurity were more than three times as high in the infants of mothers who were the wives of semiskilled and unskilled manual workers as in the infants of mothers married to professional men and business executives. The perinatal death rate and incidence of prematurity were both greater in the infants born of unmarried mothers. Examination of the causes of death suggested that the reason employed pregnant women had less successful pregnancies than housewives was that more of them gave birth to small babies whose survival rate was low.

Unemployment Among Physicians.—Dr. L. S. Potter of the Medical Practices Advisory Bureau, British Medical Association, has conducted an inquiry to ascertain the degree of unemployment and the number of "blind-alley" occupations in the British medical profession. This followed questions in Parliament on the unemployment of physicians and the statement that there were alleged to be 200 applicants for each vacant post in the United Kingdom. The Minister of Health was also asked whether, in view of the growing numbers of unemployed among British physicians, he would consider their being engaged in the Colonial Medical Service. Questionnaires were sent to 1,075 physicians, all of them registered with the bureau as seeking professional work in England. They were thus a group seeking positions or practices to better their prospects and not a cross section of the profession. Analysis of the questionnaires returned showed that 8% were unemployed. Of those in a representative group eligible for and seeking to establish themselves in general practice, not less than 5%, and not more than 7%, were unemployed and 45% stated that they were employed. Another 23% did not reply, and probably most in this group did not do so because they were suitably employed. Blind-alley or dead-end jobs were held by 25%. The figures for this group were difficult to interpret because one physician might be more ambitious than another and therefore not be satisfied with his position. Thus a practitioner who had been in one or more assistantships for several years and had been applying for openings with principal status without success might be said to be in a dead-end position.

Broken Hypodermic Needle.—A 15-year-old girl went to a hospital for an intramuscular injection of penicillin, which a nurse gave through a no. 16 needle. During the injection the girl made a sudden movement and the needle broke. An operation to remove it was performed with no remaining disability, except for a 3½ in. scar on the thigh. The girl, through her father, sued the hospital and the nurse for negligence. The judge said that there was nothing wrong with the nurse's method, but it was claimed that she used too short a needle and had pushed it in too far. The plaintiff's expert witness said that it was wrong to use a no. 16 needle and that he would have used a no. 2 needle, which is longer, thicker, and stronger. The defendant's expert witness considered that the selection of the needle and the method used were both right. The judge said that it was purely conjectural that the needle was pushed in right up to the hilt before it broke. It broke suddenly, and if a longer and thicker one had been used it would have caused more pain to the patient. He was not satisfied with the evidence that the needle was pushed in too far. All that was asked of nurses was that they should use reasonable care. The accident could have been due

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to an unexpected movement by the girl. As this could not be reasonably foreseen, it would not be right to use a thicker and longer needle and inflict extra pain on all patients to meet the possible contingency that one of them might flinch in the way this girl did. The judge said that no negligence was proved and gave judgment for the defendants.

Budget and the Health Service.—An autumn budget was introduced by the Chancellor of the Exchequer to curb spending and so help reduce imports, which are exceeding exports. The purchase tax has been increased to 30%, and this is levied not only on goods generally but also on certain medicines supplied to both private and National Health Service patients. Every new proprietary drug carries a purchase tax. The sums collected through this tax on drugs prescribed for National Health Service patients are about $700,000 and will probably be increased to nearly a million dollars per annum with the rise in tax rate. The Chancellor in his report to Parliament urged public authorities to cooperate in restraining both current and capital expenditure, and the hospitals were asked to economize. No actual restraint, however, was placed on them, and the government will not reduce hospital programs already announced. Hospital boards have been asked to undertake only those works that are urgent and necessary. The hospital building programs for 1956-1958 will not be affected. The cost of equipping new hospitals or new hospital departments will be higher because of the increased purchase tax. This will not result in any absolute increase of government spending but in the transfer of money from one government pocket to another.

Death from Penicillin.—At an inquest on the death of a 9-year-old boy, it was revealed that he had received an overdose of penicillin given intrathecally. On admission to the hospital he complained of headache, vomiting, and photophobia and was unable to move his head. A lumbar puncture was performed and penicillin given intrathecally. A trainee nurse was ordered to prepare an injection of 100,000 units, but she prepared 500,000 units by mistake and the dose was not checked by the physician giving the injection. Within 20 minutes the child had a convulsion and about four hours later died. The pathologist said that the cause of death was asphyxia due to convulsions, which were due to the penicillin. The spinal fluid was normal, and there was nothing to indicate the cause of the child's original illness. The coroner returned a verdict of death from misadventure. The jury considered that a fully qualified nurse should always be available for preparing intrathecal injections.

Cortisone Freed.—Now that at least three British firms are making cortisone in substantial quantities general practitioners are free to prescribe it for patients covered by the National Health Service and for private patients. Supplies of cortisone have so far been restricted to hospitals because the greater part has had to be imported. It is being made in Britain from sisal waste, a by-product of the rope industry.

INDIA

Endothelial Myeloma.—Agarwal and Ahuja (*Indian J. M. Res.* **43**:521, 1955) reported a case of tumor of the lower jaw observed in a 3-year-old girl during routine histopathological examination at the Central Research Institute, Kasauli. The tumor showed features characteristic of endothelial myeloma (Ewing's sarcoma). The usual sites for this type of tumor are shafts of long bones, ribs, and flat bones of the pelvis. Its occurrence in the mandible is rare, only 19 cases having been previously reported. These cases occurred either in children or in young adults. The growth in this patient was noticed only a month before operation was performed. It had grown rapidly and was excised along with a portion of the jaw. On examination the growth could not be distinguished from the bone. Cortex and medulla were homogeneous, white, and firm. There was diffuse growth of closely packed round cells with oval, vesicular nuclei and poorly-staining scanty cytoplasm. The cells tended to form alveoli separated by fibrous trabeculae. Only certain areas showed polyhedral cells. The appearance somewhat resembled that of a lymphosarcoma. There was absence of cellular pleomorphism and osteogenic elements in the tumor.

Manufacture of Drugs.—The government has accepted the recommendations of the Pharmaceutical Enquiry Committee for the expansion of the pharmaceutical industry in India. In accordance with the recommendations the government plans to centralize the administration of the Drugs Act and exercise quantitative control of production. A development council for drugs has been set up to advise on matters relating to this industry. This committee is now drawing up the second five-year plan. It was also recommended that the duty on raw materials should be adjusted. Slaughterhouses along modern lines equipped to collect and store the glands and organs required by the pharmaceutical industry should be provided in all cities and large towns. The pharmaceutical industry is asked to set up testing laboratories for certifying the products and assisting the government in preventing the sale of substandard and spurious drugs. India hopes thus to become self-sufficient in drugs and chemicals and may even be in a position later to export some drugs and chemicals to other countries.

Production of Penicillin.—The government will produce all types of penicillin at the state-owned penicillin factory at Pimpri. A committee appointed to study the production of penicillin recommended that the capacity of the factory be increased by 60%. The glass vials used for packing will be siliconized at the penicillin bottling plant in Bombay. This will enable the last drop of penicillin to be withdrawn, thus saving 10 to 15% of the penicillin. The committee favors the production of potassium and sodium penicillin, procaine penicillin, benzathine penicillin, and benzathine penicillin G. Although there is no difference between the potassium and sodium salts therapeutically, the former is less hygroscopic and cheaper to manufacture. Procaine penicillin will be dispensed (1) fortified with the potassium or sodium salt in the proportion of 300,000 units of the first and 100,000 units of the second and (2) in oil with 2% aluminum monostearate. Penicillin for oral administration will be made in the form of tablets of 200,000 units each.

Urban Health Unit.—India's first urban health unit was opened in Calcutta in November. There are at present rural health units, and they have proved to be very effective. The urban health unit was sponsored jointly by the government of India, the United Nations International Childrens Emergency Fund, the World Health Organization, the government of West Bengal, and the Corporation of Calcutta. About 68,000 persons, or 13,000 families, will benefit from the scheme. Industrial workers, expectant mothers, children, and sufferers from veneral diseases, tuberculosis, and leprosy will receive special care. An intense health education program will be undertaken. A modern maternity home with 30 beds and a well-equipped nursery will be established close to the health unit. The unit will also serve as a demonstration center and practice field to students of the All India Institute of Hygiene and Public Health. This institute will assist the Corporation of Calcutta to carry out the program of the unit.

Report of World Health Organization's Regional Director.—In his annual report to the World Health Organization's regional committee for Southeast Asia, Dr. C. Mani stated that measures for the control of malaria are expected to cover most of the affected area by 1958. The program has 134 units and serves 125 million people. The BCG program continues as the largest operation of this kind in the world, with over 43 million persons having been tested and 14 million vaccinated by the end of 1954. A large-scale training program of nurses, midwives, and other health personnel is being conducted. A plant in Calcutta is now producing cardiolipin, and it is hoped that the entire requirements of this antigen for Southeast Asia will soon come from this plant.

Indian Medical Association.—The working committee of the Indian Medical Association passed a resolution in October asking the members of the Indian Medical Association not to give training to those who were unlikely to practice "modern medicine." The committee also gave full support to the BCG vaccination campaign of the state governments.

LAW DEPARTMENT

MEDICOLEGAL ABSTRACTS

Malpractice: Full Disclosure of Dangers of Treatment Not Always Necessary.—The plaintiff filed an action against the defendant dermatologists for damages caused by their alleged malpractice in the administration of gold sodium thiosulfate injections. From an adverse judgment, the plaintiff appealed to the Supreme Court of Washington.

The plaintiff consulted the defendant dermatologists concerning skin lesions on his face and neck, which they diagnosed as chronic discoid lupus erythematosus. A recognized treatment for this disease consists of periodic injections of heavy metal salts, the continuity of which must be maintained. After a series of bismuth injections the plaintiff was started on a course of gold sodium thiosulfate therapy. Since gold sodium thiosulfate has a possible toxic effect on some persons, the defendants, in accordance with their usual procedure, first gave the plaintiff a small injection of the gold sodium thiosulfate. When the plaintiff appeared the next week for his second, and larger, injection, he complained of muscle soreness in his neck, joint pains, and pains in his arms and stated that he did not think he should have the injection that day. The defendants, after examining the plaintiff, and inasmuch as the plaintiff did not complain of or manifest any symptoms that disclosed an adverse reaction to the therapy, gave the plaintiff an injection of gold sodium thiosulfate. Shortly after this injection was given, the plaintiff developed hepatitis resulting in jaundice.

The plaintiff contended that the defendants caused the jaundice by negligently administering excessive amounts of heavy metal salts, over the protest of the plaintiff, after toxic symptoms had developed and that they were negligent in treating him without warning him of the dangers incident to the treatment.

The Court said that in order for a physician or surgeon to be liable for malpractice, he must have done something in the treatment of his patient that the recognized standard of medical practice in his community forbids or he must have failed to do something required by that standard. Except in those cases where the negligence is so gross as to be readily apparent to a layman, a finding of negligence on the part of a physician or surgeon must be based on medical testimony that shows that he departed from the recognized standard of practice of the community. The trial court found that treatment with heavy metal therapy and the dosages and intervals at which the injections were given represented the standard practice of dermatologists in the community; that it was not the standard practice to tell the patients all of the risks involved (whether a patient is advised of the risks depends upon the judgment of the individual doctor, exercised in the light of the mental and psychosomatic make-up of the patient); that it was standard practice, when possible symptoms of toxicity arose, to evaluate them in relation to the progress made in the therapy in making a decision whether to stop or continue the treatment. The Supreme Court said that, since these findings of fact by the trial court were supported by the record, it could not disturb them.

Accordingly the judgment in favor of the defendant physicians was affirmed. *Woods v. Pommerening et al., 271 P. (2d) 705 (Wash., 1954).*

Drunkenness: Defendant's Failure in Submitting to Chemical Test.—The defendant was charged with the crime of driving a motor vehicle while intoxicated. From a judgment of conviction he appealed to the Supreme Judicial Court of Maine.

On Nov. 2, 1952, the defendant drove up to a place in Rumford that was being investigated for violation of the liquor law. When he got out of his car, he appeared to be intoxicated. His condition was witnessed by a number of persons, and a deputy sheriff told him to "take off," which he did. The defendant was arrested on Nov. 13, when an indictment was returned against him. At the trial the defendant's main argument was that the delay in obtaining his arrest deprived him of his right to have a blood test taken to determine the alcoholic content of his blood at the time of the alleged crime and that this delay amounted to a deprivation of his constitutional rights.

By statute in Maine the results of blood tests to show the alcoholic content of one's blood at a particular time may be admitted in evidence. The foregoing "blood test statute" gives a respondent no "privilege." Any person can have a blood test at any time, and the result can be testified to in court under the common law as a scientific fact. The respondent was not deprived of his right to have a blood test. He had time and opportunity to go to a doctor and get one if, in fact, he desired one. He was not prevented by any act of the state's officers. If this statute gave a "privilege," as the respondent in this case claims, every driver of an automobile who drives under the influence of liquor must be arrested immediately. No person thus breaking the law could ever be convicted and sentenced unless he was "found" so driving, immediately arrested, and at once permitted to have a blood test if he requested. This would practically result in a statute of limitations of not more than a few hours, which is an absurdity. The Court failed to find in the case at bar that any right of this respondent had not been protected.

Accordingly, the judgment of conviction was affirmed. *State v. Demerritt, 103 A. (2d) 106 (Maine, 1953).*

Drunkenness: Taking of Blood Sample from Unconscious Person.—The petitioner filed a habeas corpus proceeding against the warden of the penitentiary in which he was imprisoned. The case was heard by the Supreme Court of New Mexico.

The petitioner was being held under a sentence for involuntary manslaughter, his conviction being based in part on the results of a test for intoxication, which was made from a sample of his blood. The sample was taken after an accident and while he was unconscious. The petitioner contended that the taking of the blood sample and the admission in evidence at the trial of the results of the test made of such sample was a denial of due process under the 14th Amendment of the Constitution of the United States.

The Court pointed out that the United States Supreme Court has held that a conviction, in a state court, based on evidence obtained in an illegal search and seizure is not a denial of due process under the 14th Amendment. The privilege against self-incrimination applies only to spoken evidence obtained by compulsion and not to real evidence, such as the results of an involuntary blood test. The taking of a blood sample in the usual fashion, such as was done in the present case, is not in and of itself so brutal and shocking as to offend the community's sense of justice and fairness. The taking of the sample while the petitioner was unconscious was not, therefore, a denial of due process.

The petition for a writ of habeas corpus was therefore denied. *Breithaupt v. Abram, 271 P. (2d) 827 (N. Mex., 1954).*

MEDICAL FILM REVIEWS

Surgical Anatomy of the Female Pelvis: 16 mm., color, sound, showing time 11 minutes. Prepared by Conrad J. Baumgartner, M.D., College of Medical Evangelists, Los Angeles. Produced in 1954 by Billy Burke Productions, Hollywood, for and procurable on loan from E. R. Squibb and Sons, 745 Fifth Ave., New York 22.

The purpose of this film is to demonstrate the surgical anatomy of the female pelvis. Using a combination of drawings and live photography of the pelvic cavity, the film first locates the various organs with complete anatomic accuracy and then demonstrates their locations as well as their anatomic landmarks. As a result of the effort to supplement the film with drawings, there are some defects, omissions, and weaknesses. For example, the attachment of the round ligament on the posterior surface of the cervix is too far lateral, the interstitial portion of the fallopian tube is not mentioned, and the description of the broad ligament as a tent-like structure is not clear. Gynecologists presenting this film to students will have to make supplementary remarks that will complement and clarify some of the minor inaccuracies in the narration and the drawings. In spite of these short-comings the film is recommended for those who are interested in gynecologic surgery and who are seeking better knowledge of fundamental anatomy. The photography is excellent.

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MEDICAL LITERATURE ABSTRACTS

INTERNAL MEDICINE

Cortisone in Ulcerative Colitis: Final Report on a Therapeutic Trial. S. C. Truelove and L. J. Witts. Brit. M. J. **2:**1041-1048 (Oct. 29) 1955 [London, England].

A therapeutic trial of cortisone in nonspecific ulcerative colitis was carried out in five different regions in Great Britain, and a preliminary report of the immediate results appeared in the *British Medical Journal* (**2:**375 [Aug. 14] 1954; abstracted in THE JOURNAL, Nov. 20, 1954, p. 1200). Of the 210 patients with chronic ulcerative colitis reported on, 109 were treated with cortisone, the usual dose being up to 100 mg. daily for six weeks, and 101 who were given placebos served as controls. The attending physicians were not informed which preparation the patient was receiving. In the present paper results of follow-up of 205 of these 210 patients for an average period of 18 months are reported. At every stage of severity of the illness and in both first attacks and relapses, the cortisone-treated patients did better than the corresponding control patients. Cortisone was particularly beneficial in first attacks of the disease. Patients treated with cortisone were somewhat more likely to suffer from pyogenic complications and eye complications than patients not so treated, but the two groups did not differ appreciably in other complications such as polyposis, thromboembolic complications, aplastic blood disorders, and ulcerative stomatitis. To minimize the risk of pyogenic complications in patients treated with cortisone, it seems advisable to combine cortisone with penicillin or sulfonamides. Sigmoidoscopy was carried out at the end of the treatment in 120 patients so that comparison could be made with the sigmoidoscopic appearances before the institution of treatment. Normal or improved sigmoidoscopic appearances were more frequent in the cortisone-treated group than in the controls. Similarly, in 51 patients examined roentgenologically with the aid of barium enema at the end of the treatment, improvement in the radiological appearances was more common in the cortisone-treated patients. Of 16 patients who died in the course of the treatment or within the next two months, 5 were in the cortisone-treated group (a mortality rate of 4.6%) and 11 (10.9%) were in the control group. Eight of the deaths occurred among the 24 patients who underwent ileostomy; two of the eight were in the cortisone-treated group and six in the control group. Nine months after the trial period, patients treated with cortisone in the first attack of ulcerative colitis preserved a clear advantage over the corresponding control patients. By contrast, patients treated with cortisone for relapses had lost the initial advantage they showed at the end of the trial period. After 18 months of follow-up, essentially the same pattern was observed as at 9 months, but with a slight worsening of the general aspect. In addition to the 24 patients who underwent ileostomy in the course of the trial period or shortly afterwards, 20 patients underwent ileostomy during the follow-up period; of these 44 patients, 14 (31.8%) were dead at the end of the authors' study. Cortisone is a valuable addition to the medical treatment of ulcerative colitis. It seems likely that better short-term results than those obtained in the present trial could be achieved by the use of higher doses of cortisone when necessary. However, the effect of cortisone is far from permanent, particularly in the established disease, though it is possible that more prolonged treatment than that practiced in the authors' patients will give better long-term results.

Treatment of Epidemic Hepatitis with Cortisone. W. Siegenthaler and L. Suter. Schweiz. med. Wchnschr. **85:**1051-1053 (Oct. 22) 1955 (In German) [Basel, Switzerland].

Of 50 patients with epidemic hepatitis, 25 were treated with cortisone and 25 received no cortisone but, instead, infusions of 20 to 40% levulose (*d*-fructopyranose) solution (Laevosan). Both groups of patients were given bed rest and dietetic treatment. The cortisone-treated group received orally on 10 successive days doses of from 100 to 200 mg. of hydrocortisone, depending on the severity of the hepatitis. On the last two or three days of treatment these doses were usually reduced. Cortisone had a definite effect on the course of the disease. This became evident particularly in the decided and rapid improvement in the general condition with improvement in appetite and in the rapid reduction in the serum bilirubin content, which was much slower in the patients who did not receive cortisone. As regards the mode of action of cortisone on the hyperbilirubinemia, the authors believe that its anti-inflammatory effect restores the bile flow that was blocked by the serositis. Increase in hepatic glycogen may also play a part. Some of the undesirable secondary effects of cortisone therapy became evident in that despite low salt intake many of the patients showed retention of water and four showed glycosuria, but these secondary effects promptly subsided after cortisone treatment was discontinued. Relapses of hepatitis occurred in 6 of the 25 patients, but these again responded to cortisone therapy. This suggests that in some cases cortisone may interfere with the immunizing process. For this reason the authors advise against the routine use of cortisone in epidemic hepatitis, preferring its restriction to severe cases. They feel that a damaging effect on the liver is not to be feared with orally given doses of 100 mg. of hydrocortisone for 10 days. Cortisone, together with the customary infusion therapy, should be used also in hepatic coma as long as other measures have little effect in this condition.

Hiatus Hernia and Angina Pectoris. H. Schmid and G. Biörck. Klin. Wchnschr. **33:**928-931 (Oct. 15) 1955 (In German) [Berlin, Germany].

The differentiation between hiatus hernia and angina pectoris may be extremely difficult because substernal pain, sometimes with radiation to arm and hand, is the chief symptom in both conditions. On the basis of a case history and a review of the literature, the authors discuss the relationship of esophageal disorders and heart symptoms, pointing out that the topographic anatomy of the esophageal hiatus shows the close connection between the esophagus, the two vagus nerves, and the wall of the left ventricle. Then they call attention to the factors that are important in the differentiation between esophageal hiatus hernia and angina pectoris. In diaphragmatic esophageal hiatus hernia, the substernal pains generally radiate to the right shoulder, and, whereas patients with hiatus hernia rarely obtain relief by glyceryl trinitrate (nitroglycerin), this medication nearly always gives relief in coronary diseases. The administration of atropine has the opposite effect. Attacks of pain after eating or while lying down are usually caused by hiatus hernia. Patients with angina pectoris have attacks of pain after exertions and emotional excitement. Work tests with electrocardiography may prove valuable in the differentiation, but a negative exertion test does not exclude angina pectoris, and even a positive test is not always decisive. If symptoms of coronary disease exist without objective signs of a heart lesion in a patient in whom roentgenography reveals a hiatus hernia, the authors feel that a thorough history will be helpful to decide whether the hiatus hernia is the cause of the coronary symptoms or whether the hiatus hernia is a secondary disease. The less the coronary symptoms give the im-

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The place of publication of the periodicals appears in brackets preceding each abstract.

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pression of a typical exertion angina, the more thought should be given to hiatus hernia. Conservative treatment of the hiatus hernia should be instituted, and the success or failure of this treatment will be an aid in the differentiation between hiatus hernia and coronary disease. Furthermore, some of the general recommendations for the relief of the symptoms of hiatus hernia will also be of therapeutic value in coronary disease. The further course of the hiatus hernia will then make it possible to decide on the need for the surgical treatment.

Chronic Bronchitis: The Effect of Cigarette-Smoking. N. C. Oswald and V. C. Medvei. Lancet **2**:843-844 (Oct. 22) 1955 [London, England].

The authors mention the following six factors as contributing to the development of chronic bronchitis: infection, polluted inspired air, the accompaniments of poverty, allergy, heredity, and the degenerative changes of advancing years. In addition, chronic bronchitis may be secondary to various pulmonary and general diseases. Assessment of the relative importance of any one factor is likely to be hazardous and can best be undertaken by selecting a group of people as similar as possible in all other respects. In the present instance the factor of cigarette smoking was investigated, and comparison was made of the prevalence of minor respiratory symptoms and of bronchitis in smokers and nonsmokers. The prevalence of minor respiratory symptoms and bronchitis was investigated in 5,844 clerical workers and was compared with their smoking habits. The proportion of clerical workers having minor respiratory symptoms and bronchitis was consistently higher in smokers than in nonsmokers. The greater prevalence of bronchitis in the older age group was clearly shown. For the entire series, 36% of the smokers were free from respiratory symptoms, compared with 53% of the nonsmokers. About 48% of the smokers and 38% of the nonsmokers had "mild respiratory symptoms." This difference must be accounted for to some extent by the so-called smoker's cough. The prevalence of bronchitis in smokers of the two sexes is very similar; the differences in nonsmokers are small. These findings suggest that sex is not an important factor in the development of bronchitis among persons living and working in similar circumstances.

The Treatment of Diastolic Hypertension with a Fixed Combination of Hypotensive Drugs. J. M. Waldron, D. J. Reinhardt III, W. K. Jenson and F. Goldstein. Am. J. M. Sc. **230**:551-557 (Nov.) 1955 [Philadelphia].

The authors have had experience at their clinic with all presently used types of hypotensive drugs, given singly and in various combinations. When a combination of Rauwolfia serpentina, protoveratrine, and phenoxybenzamine (Dibenzyline) in a single capsule became available, they began a therapeutic trial with this compound. Of 75 patients selected for study only 38 were followed for a minimum of six months' treatment and were fully evaluated. The evaluation of changes in the blood pressure was based chiefly on the diastolic pressure. Nineteen of the 38 patients achieved consistently normal diastolic pressure; 9 additional patients had a fair response. Thus 28 of 38 patients showed a satisfactory response. The remaining 10 patients, most of whom had severe hypertension or hypertensive cardiovascular disease, responded unsatisfactorily or not at all. None of the patients with nitrogen retention responded satisfactorily. There were no other features that permitted the prediction of the hypotensive response in the individual patient, although as a group patients with the severest type of hypertension did much worse than patients in the less severe groups. The decline in blood pressure was usually delayed and gradual in patients responding favorably. In some patients a good response was seen after two weeks, but in the majority it took four weeks before a significant drop in blood pressure was apparent, and the maximal therapeutic effect was frequently reached only after six to eight weeks. The pulse rate decreased concurrently with the blood pressure. The relatively slow rate of blood pressure reduction and the slow rate of climb when the drug is withdrawn are safety factors, and, together with the ease of administration and the minimum of severe side-reactions, are definite advantages. The main disadvantages are: the high incidence of minor annoying side-reactions, the failure of a rather large percentage of patients (about 30%) to respond, and the inability to predict the response in most instances.

Disability of the Knee Due to Referred Pain and Related Phenomena. R. J. Dittrich. J. Am. Geriatrics Soc. **3**:800-803 (Oct.) 1955 [Baltimore].

Clinical observations have revealed pathological changes at two sites in the lower part of the back. The abnormalities consist of fibrosis of subfascial fat, with adhesions between this structure and the overlying lumbodorsal fascia. The locations of the alterations are the midsacral paraspinal region and the midlumbar region over the lateral portion of the sacrospinalis muscle. The pathophysiological effects derived from the lesions are predominantly referred pain and referred tenderness, appearing in the spinal segmental (sclerotomal) distribution of the nerves that receive the impulses at their source. The midsacral site lies within the sclerotomal field of the first sacral nerve; the midlumbar site is supplied by the second lumbar nerve. A characteristic clinical picture of disability of the knee may develop. The outstanding features are pain on the anteromedial aspect of the knee, less commonly in the lateral portion; onset without known cause or, at times, related to minor injuries; disability due to pain on use, often sufficiently intense to preclude work; absence of objective evidence of serious injury; and moderate to marked tenderness elicited on the anteromedial or anterolateral aspect of the joint and extending above and below the joint line for a distance of 2 or 3 in. The diagnosis is made from the pattern of distribution of the referred pain and tenderness, together with demonstration of a significant degree of tenderness at the sites of the trigger-points, in the sacral and lumbar regions. Local anesthesia by infiltration of the subfascial space in the sacral region is employed as a diagnostic measure and, not uncommonly, provides substantial or complete relief of symptoms. In some instances, surgical correction is indicated. The author presents the histories of four patients to illustrate this form of disability of the knee.

A Case of Takayashu's Syndrome: The Pulseless Disease. L. Trias de Bes, J. G. Sanchez Lucas and F. Ballestra Barcons. Brit. Heart J. **17**:484-488 (Oct.) 1955 [London, England].

The most striking feature of Takayashu's or pulseless disease is the complete absence of arterial pulsation in the main arterial trunks arising from the aortic arch. It was first described by the Japanese ophthalmologist Takayashu in 1908. His attention was drawn to the serious ocular accompaniments. Japanese authors have described a total of 58 cases. After citing three previous European reports, the authors present a new case, which they believe is the 37th of the non-Japanese cases hitherto reported. The patient was a 19-year-old woman. She was of asthenic constitution but had been able to work in the household and on the farm. At the age of 18 she had aural vertigo and some short syncopal attacks with slight convulsions. She was complaining of progressive weakness and had noticed undue muscular tiredness in both arms, so that she was apt to drop things; this was due to intermittent claudication of the arms. In 12 months there had been three bouts of transitory hemiparesis, lasting for about half an hour, accompanied by dysarthria. Abrupt movements of the head accentuated the giddiness and even provoked syncope. The patient had hypersensitivity of the carotid sinus and frequent pains in the head. A few weeks after the onset of the illness, ocular troubles set in with progressive blurring of vision. There was total loss of sight in the right eye two months before admission to hospital. The results of the clinical, laboratory, and ocular examinations corroborated the diagnosis of pulseless disease. Throughout the year in which the patient has been under clinical observation, there has been no change in the cardiovascular state. In a quiet environment and with avoidance of effort, there has been no repetition of the cerebral ischemic episodes or the claudication of the superior extremities. The ocular disturbances have, on the other hand, become progressively worse. Mesenchymal abnormalities observed in the enucleated eye suggested a possible congenital basis for the disease.

Diabetic Amyotrophy. H. Garland. Brit. M. J. **2:**1287-1290 (Nov. 26) 1955 [London, England].

A syndrome that includes weakness and wasting of muscles with tendon areflexia, associated with frank diabetes mellitus or at least with impaired glucose tolerance, is described in 12 patients all of whom with the exception of one were over 50 years of age. Less constant features were extensor plantar responses, a raised protein content of the cerebrospinal fluid, and electromyelographic changes in the affected muscles often compatible with a cord lesion and sometimes appearing to be of peripheral origin. There is evidence that some of these cases resulted from a myelopathy and that changes may occur at any cord level, though they are most commonly seen in the lumbar region. Pain of a similar distribution to the amyotrophy was a frequent though not constant feature. The protein content of the cerebrospinal fluid may be normal or raised. At the present time "diabetic amyotrophy" would appear to be the best term to apply to the syndrome. Since it is generally accepted that diabetic neuropathy is usually purely sensory and is determined by peripheral nerve changes only, it may equally well be true that diabetes can produce changes limited to the motor fibers of peripheral nerves. But it would seem that diabetic amyotrophy is always a reversible process no matter where the anatomic disturbance appears to be. Although diabetes mellitus may determine changes in the spinal cord it may presumably result in changes in the peripheral nerves of the same patient at the same time. Sensory loss has been largely absent in the author's patients, but the findings of sensory loss in no way vitiates the diagnosis of "diabetic amyotrophy." Diabetic amyotrophy is the result of uncontrolled diabetes mellitus and is probably always reversible by full diabetic control.

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An Evaluation of the Urinary Uropepsin Excretion in Distinguishing Benign from Malignant Gastric Ulcer. S. J. Gray, C. G. Ramsey, R. W. Reifenstein and L. J. Krakauer. Gastroenterology **29:**641-652 (Oct.) 1955 [Baltimore].

The uropepsin excretion in the urine reflects the peptic activity of the stomach. It is derived from the secretion of pepsinogen directly into the blood stream by the peptic cells. Pepsinogen is then transported to the kidneys and excreted in the urine as uropepsin. Uropepsin measures the pepsinogen production of the stomach as evidenced by the disappearance of the enzyme from the urine after total gastrectomy and its absence in patients with pernicious anemia. Previous studies indicated that it is an accurate reflection of gastric pepsin secretion. The purpose of this presentation is to evaluate the possibility of distinguishing gastric cancer from benign gastric ulcer by measuring the 24-hour excretion of uropepsin in the urine. Previous studies in this field have been equivocal. The urinary uropepsin excretion was determined in a control group of 265 subjects, consisting of 120 hospitalized patients without demonstrable gastric disease and 145 unselected college students. Similar determinations were performed in 205 patients with duodenal ulcer, 90 patients with gastric ulcer, and 60 unselected patients with adenocarcinoma of the stomach. The diagnosis of gastric ulcer or cancer was established by microscopic examination of surgically resected specimens, postmortem examination, or by clinical evidence of complete healing and disappearance of the ulcer by x-ray and gastroscopic criteria. The authors found that the mean uropepsin output in gastric ulcer was 5,756 units; it was significantly higher than the normal of 3,670 units, although lower than in the duodenal ulcer group in which it was 8,471 units. A low mean uropepsin excretion of 1,815 units was observed in gastric cancer. The lowest mean values (13 units) appeared in 70 patients with gastric atrophy of pernicious anemia. A uropepsin excretion below 1,000 units was found in only 1.1% of the gastric ulcer patients, contrasted to 55% of the gastric cancer group. Uropepsin values above 3,000 units were observed in 100% of the patients with duodenal ulcer, in 79.6% of those with gastric ulcer, and in 21.7% of those with gastric cancer. Although the uropepsin excretion appears to parallel the basal hourly secretions of free hydrochloric acid in the gastric juice, a normal or high uropepsin output was observed frequently in gastric ulcer patients in spite of low gastric acidity. This disparity may prove significant in distinguishing benign from malignant disease. In the presence of an ulcerating gastric lesion, a uropepsin excretion of 1,000 units or less indicates a high probability of cancer. An elevated uropepsin excretion above 3,000 units favors, but does not prove, the benign character of the lesion. Since only 55% of gastric cancer patients excreted less than 1,000 units, the uropepsin determination is not suitable as a screening test for gastric cancer. It may prove useful in conjunction with other screening procedures.

Alkaline Treatment of Acute Allergic Shock. H. G. Clark. J. Michigan M. Soc. **54:**1198-1199 (Oct.) 1955 [St. Paul].

In conformity with the acid-anoxi-endocrine theory of allergy, Clark has been giving sodium bicarbonate and potassium bicarbonate, in various proportions and amounts, to patients with acute and chronic allergic manifestations. Five grams of the combined alkalis dissolved in water is given every hour or two for one, two, or three doses with consistently good results, particularly in the acute cases of allergy. Chronic allergic diseases such as asthma involve more than one pathological change and are not so much benefited by the alkalis as is acute allergic shock. In anaphylactic shock due to penicillin, the recovery is rapid and complete, so much so that the author discontinued giving any other medicaments such as adrenalin, aminophyllin, and the antihistaminic drugs. He has resorted in the last eight months to the intravenous injection of sodium bicarbonate to patients with severe allergic reactions to penicillin or other allergic attacks. The solution used is available in an ampul containing 3.75 gm. of sodium bicarbonate in 50 cc. of water. The author also used 1/6 molar sodium lactate. With the intravenous use of the alkali the effect is very rapid, occurring in from 17 seconds to a minute or two; with orally given medicaments, from 20 minutes to an hour elapses before improvement is evident. Time is a very important factor, particularly in allergic shock caused by penicillin, and the intravenous administration may be of vital importance. Histories of four patients are presented that are typical of many others. No other treatment except the alkalis was needed. The dramatic speed of recovery suggests that the alkali corrects some basic physiological mechanism involved in the allergic reaction. Sodium lactate has been used intravenously in five cases of surgical shock and hemorrhagic shock. When more prolonged and less prompt action is desired, such as during a major operation, lactate solution is preferable to the sodium bicarbonate. This last should be used with caution when cardiorenal, hypertensive, and arteriosclerotic diseases are present. It is poorly excreted and has pressor effects. It should not be used in severe edema, since it increases the edema. In these latter cases, the proportion of potassium should be changed. In an emergency these cautions can be ignored, since they may be corrected when the emergency is passed.

Incidence of Clinical Hypersensitiveness to Medications in Patients with Bronchial Asthma. G. Franceschini. Prog. med. **11:**431-436 (July 31) 1955 (In Italian) [Naples, Italy].

A study was made of 613 patients with bronchial asthma who were seen at the University of Rome outpatient clinic for allergic diseases from 1952 to 1955 to determine the incidence and type of clinical hypersensitiveness to various medications. Skin reaction tests to exogenous allergens responsible for the asthmatic syndrome were positive in 310 patients, most of them in the 10 to 40 year age group, and negative in the others, most of them in the 40 to 70 year age group. Of the 613 patients, 51 (8.38%) showed clinical hypersensitiveness to drugs; 8.38% of these were patients with a positive skin reaction and 8.24% with a negative skin reaction. Hypersensitiveness to acetylsalicylic acid was the most frequent (3.73%), and this high incidence is ascribed to the fact that acetylsalicylic acid is the medicament used most frequently by patients with bronchial asthma. Hypersensitiveness to aminopyrine and its derivatives was the next most common. The clinical manifestations of intolerance were urticaria, bronchial asthma, angioneurotic (Quincke's) edema, serum sickness, erythema, cutaneous purpura, and fever. In none of the patients were the drugs the first cause of asthma. They did, however, aggravate it, especially when it was already rather

grave and had become resistant to the common therapies. Scratch tests with drugs were always negative except in one instance in which a patient showed a positive reaction to acetylsalicylic acid.

Largactil in Treatment of Hemorrhagic Shock. S. Fertitta and E. Scio. Minerva chir. **10**:811-815 (Aug. 31) 1955 (In Italian) [Turin, Italy].

The antishock action of chlorpromazine (Largactil) was studied in dogs from which about 600 to 1,100 cc. of blood (approximately three-fourths of the total blood volume) was withdrawn. Some of the dogs were given 2.5 mg. of chlorpromazine per kilogram of body weight intravenously before, and another such dose intramuscularly after, the blood was removed. Others that served as controls were not given the ganglioplegic drug. This did protect the animals of the first group from the shock that generally follows a profuse and rapid loss of blood. A soporous state with slowed down reactions to stimuli lasted in these dogs for about 6 hours, but within 24 hours all of them were again normal, and no death was recorded. In the controls, however, the state of shock, with polypnea, tachycardia, drop in blood pressure, and even diarrhea, in some instances, was so pronounced that it caused the death of two animals. The authors attribute the antishock effect of chlorpromazine to its marked adrenolytic action, which prevents the onset of the vasoconstriction that is secondary to the first manifestations of shock. The better tissue oxygenation that this drug brings about also plays a part in preventing the onset of shock.

SURGERY

Direct-Vision Suture of Interatrial Septal Defect During Hypothermia. H. Swan, S. G. Blount Jr. and R. W. Virtue. Surgery **38**:858-871 (Nov.) 1955 [St. Louis].

The authors review the history of the surgical methods employed in the treatment of interatrial septal defects. Believing that direct vision is an important principle in this form of surgery, they concentrated their effort on hypothermia, which allows a short period for intracardiac repair under direct vision. Their method consists of reducing the body temperature to approximately 26 C by immersion in ice water. In the past three years, 100 patients having atrial septal defects have been evaluated and, of this number, 30 have been selected for closure of their defect under direct vision during hypothermia. Three had primum lesions; the remainder were of the secundum type. The authors recognize the profound difference in the physiological and anatomic pathology between primum and secundum lesions. They make a strong plea to separate these entities so that comparative evaluations can be meaningful. Of 27 patients having secundum type lesions, 5 had associated cardiac anomalies exclusive of aberrant pulmonary veins entering the right atrium, and 23 survived. Of three patients with primum lesions, only one survived, uncured. Postoperative catheterization data are available on 21 patients and reveal closure of the defect in all but 2. Total closure of the anatomic defect is essential if the disordered physiology is to be cured. Eighty per cent closure will have little or no effect upon the volume of the shunt. For the direct-vision closure of very large defects, a continuous suture is preferable to an interrupted one if complete closure is to be achieved. In the secundum type of atrial septal defects, direct suture during hypothermia is very effective and involves slight risk. Patients with secundum defects who have a large left-to-right shunt should be offered operation at an early age, before they begin to have excessive dilatation of the pulmonary arterial tree, cardiac enlargement, or progressive elevation of pulmonary resistance, since the risk of operation is quite low before these changes occur. Patients with extremely high pulmonary resistance and minimal or reversed shunts have passed the stage at which surgical treatment will be of benefit.

The Diagnosis and Treatment of Tricuspid Atresia. W. L. Riker and R. Miller. Surgery **38**:886-902 (Nov.) 1955 [St. Louis].

Tricuspid atresia is not merely a fusion of the valve cusps but an absence of valve structure. Solid myocardium separates the right atrium from the right ventricle. There is always an interatrial septal defect. Variations of this basic pattern depend upon the degree of patency of the pulmonary outflow tract and the position of the great vessels. Three variations of tricuspid atresia are explained. In the past 10 years, 51 patients with tricuspid atresia have been studied at the Children's Memorial Hospital in Chicago. Sixteen patients were not operated on, but 35 underwent aortic-pulmonary anastomosis or similar procedures. The presence of left heart strain and peaked, prominent P waves in the electrocardiogram of a cyanotic infant with relatively normal heart size was diagnostic of tricuspid atresia. A history of cyanosis from birth was almost constant, and dyspnea, weakness, and failure to gain weight were common. Some patients had episodes of unconsciousness, usually following crying or feeding. Decreased exercise tolerance was usual in the older children. A loud, harsh systolic murmur was usually heard best in the third intercostal space to the left of the sternum. Chest fluoroscopy was helpful in that it revealed absence of right ventricular enlargement as an aid in differentiation from other types of cyanotic congenital heart disease. Electrocardiographic evidence of left ventricular hypertrophy was present in every patient in this series. Eighty per cent of the children were less than 3 years old when they came for operation or died untreated. A newly devised Potts-Smith operation was performed on a patient with tricuspid atresia in January, 1947. The authors describe the technique that was gradually developed for use in infants only a few weeks or months old. Of the 35 patients who underwent aortic-pulmonary anastomoses, none died during the procedure, but 5 died within 14 days after operation, either of heart failure or pulmonary infarcts secondary to thrombosis at the anastomosis. Two of the 30 patients who were discharged from the hospital obtained poor clinical results and retained persistent heart failure. The other 28 patients had good immediate results; their cyanosis disappeared, they were normally active, and the spells of unconsciousness did not recur. A few patients had mild congestive failure easily controlled by digitalis. There have been five late deaths. Nineteen of the remaining 25 children, who have been followed for from four months to eight years, obtained good results. Five patients, classified as having fair results, have a mild degree of congestive failure controlled fairly well by digitalis. One patient, with transposition of the great vessels and pulmonary stenosis operated on four months ago, is in congestive failure now, but improvement may occur over the next few months as it has with several patients. Young children with tricuspid atresia often became progressively more cyanotic and dyspneic as their ductus arteriosus narrowed and obliterated. In this group the mortality is practically 100% without operation. Therefore, if an infant with tricuspid atresia becomes progressively more cyanotic and dyspneic and begins to have spells of apnea or unconsciousness, an aortic-pulmonary anastomosis should be performed as soon as possible, even though the patient is extremely young and small.

Repair of the Partial Form of Persistent Common Atrioventricular Canal: So-Called Ostium Primum Type of Atrial Septal Defect with Interventricular Communication. J. W. Kirklin, G. W. Dougherty, H. B. Burchell and E. H. Wood. Ann. Surg. **142**:858-862 (Nov.) 1955 [Philadelphia].

A case of so-called ostium primum type of atrial septal defect with interventricular communication is described in a 27-year-old woman who complained of dyspnea, fatigue, and mild chest pain on exertion, of three years' duration. The patient's systemic blood pressure was 96 mm. Hg systolic and 60 mm. Hg diastolic. A systolic murmur, grade 1, heard in the pulmonic valvular region, was more prominent after exercise. The second sound in the pulmonary area was accentuated, grade 1. Roentgenograms and fluoroscopic examination of the chest revealed enlargement of the pulmonary trunk, pulmonary arteries, and right ventricle, with increased pulsation of the pulmonary arteries. The electrocardiogram was interpreted as showing right bundle branch block. A diagnosis of partial form of persistent common atrioventricular canal was made preoperatively and surgical repair was effected as follows. The patient's chest was opened through an anterolateral incision through the fifth interspace. The right pulmonary veins were enlarged and could be seen to empty in the left atrium. The right atrium was enlarged. A soft, short

systolic thrill was felt over the base of the pulmonary trunk. The atrial well of Gross was sutured onto the right atrium in the usual fashion. A defect in the lowest portion of the atrial septum measured about 4 to 4.5 cm. This defect was in communication with a cleft between the mitral and tricuspid valve rings and lower down, with a defect involving the portion of the ventricular septum immediately beneath the atrioventricular valves. The mitral valve was competent, and its leaflets were not cleft. The tricuspid valve was competent without regurgitation. A finger could be passed easily from the right atrium into either the left atrium or the left ventricle. A piece of polyvinyl plastic sponge about 3 mm. in thickness was trimmed to the proper size and sutured into place. The well was disconnected after being in place one and a half hours, and the defect in the right atrium was closed in the usual fashion. The postoperative course was uneventful. No evidence of heart block occurred. Study by cardiac catheterization four months after operation showed that the defects in both the atrial and ventricular septums were completely closed, and the heart was hemodynamically normal. The successful complete closure of this complicated type of defect may not be possible in every case. Evidence of mitral insufficiency would be considered a definite contraindication to exploration. A polyvinyl plastic sponge seems ideally suited to use in closure of the septal defects of the partial form of persistent common atrioventricular canal; when carefully sutured to the edges of the defect, the sponge soon becomes incorporated firmly into the septum and seems likely to remain permanently in place.

Some Practical Considerations in the Surgery of Blood Vessel Grafts. R. R. Linton. Surgery **38:**817-834 (Nov.) 1955 [St. Louis].

After discussing the indications for reestablishing the arterial continuity of the aorta and major arteries, Linton comments on the various types of grafts: the autogenous venous graft, the homologous venous graft, and the homologous arterial graft, and on the use of synthetic fabrics. He believes that the use of the homologous arterial grafts is a method of treating aortic and major arterial lesions that supplants all others in many patients. It is a feasible procedure today because of better surgical equipment and suture material; the availability of the anticoagulant heparin to prevent the clotting of the blood during the operative procedure and the antibiotics to prevent infection; improved anesthesia techniques, including the catheter spinal type of anesthesia, which has been most commonly used; the better preoperative and postoperative care of these critically ill patients; and last and perhaps most important of all the fact that arterial homografts are now available in blood vessel banks for the performance of these highly technical procedures. The end-to-side type of vascular anastomosis has made it possible to extend the homografting procedures to include cases that could not possibly be accomplished with the end-to-end method. The chief contraindications to this type of surgery are (1) severe coronary disease, which would make these long operative procedures too dangerous to perform, (2) extensive obliterative arterial disease involving the aorta and the major arteries so that the grafts cannot be anastomosed satisfactorily to the host arteries, and (3) obliteration of the popliteal artery and its terminal branches.

The Use of Vessel Grafts in the Treatment of Popliteal Aneurysms. O. C. Julian, W. S. Dye, H. Javid and W. J. Grove. Surgery **38:**970-980 (Nov.) 1955 [St. Louis].

The authors report on the results obtained in eight patients with implantation of a vessel graft after a complete resection. One patient had bilateral aneurysms, making a total of nine lesions operated on. Eight of these aneurysms were the result of arteriosclerosis and one was a micotic aneurysm occurring during the course of an acute subacute bacterial endocarditis. Five autogenous saphenous grafts, one homologous vein graft, and three frozen homologous artery grafts were used. One failure to preserve distal artery pulses is reported without serious results other than significant claudication. In this patient a lumbar sympathectomy failed to relieve this symptom. A second patient is included in whom sympathectomy was performed before the aneurysmectomy and the graft. The remaining seven lesions were removed and grafted without lumbar sympathectomy. In seven patients the pulse at the ankle was either restored or maintained. Two operations resulted in healing of gangrenous area on the toes. The authors noticed in all of the large aneurysms that the factor of elongation in the stretched vessel tended to angulate the anterior tibial artery. This should be considered one of the methods by which the pulsatile flow to the ankle is obstructed. In addition, a concomitant obstructive arteriosclerotic lesion may be present distal to the aneurysm. A second consistent observation was the infrequency with which open arteries branched from the aneurysm itself. Such arteries as the medial and lateral superior geniculate were either occluded in the wall of the aneurysm or were very small. After obtaining proximal control of the artery above the aneurysm, it was possible to open the aneurysm and, after evacuating clots, obtain control of these vessels flush with the wall of the aneurysm externally. Since they were small or occluded, it did not seem important that they be subjected to special handling. Wherever possible, a frozen homologous artery graft was used. Vein grafts were used when it was inconvenient to use an artery or when an artery was not available. There has been no observable difference in this period of observation in the late behavior of the two types of grafts.

Surgical Implications of Non-Thrombocytopenic Purpura. J. P. Muldoon, A. M. Berg and D. W. Kinnaird. Ann. Surg. **142:** 817-823 (Nov.) 1955 [Philadelphia].

The occurrence of Henoch-Schönlein (anaphylactoid) purpura with prominent skin, joint, visceral, cerebral, renal, and ocular manifestations is described in three men, aged 59 years, 19 years, and 38 years, respectively. The presence of a palpable mass in the left upper quadrant of the abdomen associated with generalized, intermittent abdominal pain was a deciding factor in favor of laparotomy in the 59-year-old patient. A sharply demarcated segment of the jejunum was observed to be scarlet red, greatly enlarged, and indurated; this necrotic area of the jejunum influenced the surgeon, who feared perforation, to perform a segmental resection and end-to-end anastomosis. The patient died on the seventh postoperative day. The absence of joint pain and purpuric lesions of the skin on the admission of the 19-year-old patient with pronounced tenderness of the abdomen obscured the clinical diagnosis. Laparotomy was performed and the diagnosis of nonthrombocytopenic purpura was made from the appearance of the ileum. Postoperatively the patient was treated with rutin, and the purpura disappeared gradually. Abdominal cramps, severe vomiting, and rectal bleeding made exploratory laparotomy unavoidable in the third patient, but, in the lack of manifestations other than visceral, the diagnosis of nonthrombocytopenic purpura was made only at the surgical intervention. Postoperatively he was treated successfully with rutin and cortisone. The various manifestations of nonthrombocytopenic purpura may bring the patient to the neurologist, dermatologist, internist, ophthalmologist, or surgeon. The surgical implications are of paramount importance. There are only two indications for laparotomy, namely, perforation and intussusception. If laparotomy is performed and neither of these conditions exist, resection is not indicated, as the lesion will regress spontaneously. However, if impending perforation is suspected, the segment involved should be resected.

Pneumonectomy in a Two-Month-Old Infant with Pleuropulmonary Staphylococcia. M. Chevalley, J.-P. Binet and G. Vermeil. Presse méd. **63:**1393-1394 (Oct. 19) 1955 (In French) [Paris, France].

Surgical treatment of staphylococcic infection in infants should be used only as a last resort, after medical treatment and drainage of air and pus have failed. The authors have most often used lobectomy in their refractory cases, but in three instances they performed pneumonectomy. Two of these patients died, one of associated purulent pericarditis and one from aspiration of vomited milk after a satisfactory postoperative result. The history of the third patient, a two-month-old baby girl, is presented in detail. Operation was considered indicated because of a sudden worsening of the general condition and persistence of a large bronchopulmonary fistula, despite initial improvement with antibiotic therapy and drainage. The postoperative course

ran smoothly, but there was partial disunion of the thoracotomy scar and some local suppuration caused by the staphylococci, which had become resistant to all antibiotics. The authors realize that this serious operation, performed in a young child, is risky in many ways. In the case reported, however, it was justified because it clearly saved the patient's life.

Fibrosarcoma of Breast. P. A. Lodi and M. de A. Figueiredo. Rev. Assoc. med. brasil. **2:**49-54 (Oct.) 1955 (In Portuguese) [São Paulo, Brazil].

Two hundred ten cases of malignant tumor of the breast were observed in a large hospital of Belo Horizonte during the last 30 years. Three patients, two women and a man, had sarcoma of the breast. A woman 42 years old requested treatment for a small nodule that appeared on the right breast four months prior to consultation. Histopathological examination of the removed nodule showed sarcoma. A radical mastectomy followed. Histological examination of the removed breast showed a fibrosarcoma, which had originated on the basis of a preexisting fibroadenoma. The patient is in normal health with a survival period of more than 19 years since the operation. The operative scar and roentgenograms of the thorax are normal. The satisfactory results are due to early operation, moderate degree of malignancy of the tumor, and radical type of mastectomy. Fibrosarcoma of the breast is rare. The tumor may appear as a small nodule that remains unchanged for several years and then starts growing rapidly, or it may grow rapidly soon after it appears. Metastases and recurrences are frequent. Metastases travel via the blood to the lungs, pleura, liver, mediastinum, and other structures. In rare cases the tumor may give metastases by way of the lymph nodes. Malignancy of the tumor depends on the degree of histological differentiation of the tumoral tissue. Poorly histologically differentiated fibrosarcomas are more malignant than well-differentiated tumors. The treatment consists of radical mastectomy that prevents metastases through the lymph nodes, gives permanent cure, and does not interfere with the functional capacity of the arm.

The Value of Achlorhydria as a Screening Test for Gastric Cancer: A 10-Year Report. C. R. Hitchcock, W. A. Sullivan and O. H. Wangensteen. Gastroenterology **29:**621-632 (Oct.) 1955 [Baltimore].

In view of the high death rate from gastric cancer, the authors aimed at its early detection, preferably while symptoms are still absent. The studies described were begun in July, 1945, as a joint project between the departments of pathology, radiology, medicine, and surgery at the University of Minnesota Hospitals. All outpatient registrants over the age of 50 in the University Hospitals were tested for gastric hydrochloric acid secretion by the method of intubation, and three injections of 0.5 mg. of histamine phosphate were used for gastric stimulation. Those classified as achlorhydric or hypochlorhydric were selected for study. A total of 4,936 gastric analyses were performed and 1,563 patients were found to fit the criteria for this study. A group of 77 pernicious anemia patients, and a group of 107 achlorhydric patients were added to the study. The investigations indicated that patients with pernicious anemia should be subjected to gastric roentgen examinations every 6 months, and those with achlorhydria or hypochlorhydria every 9 to 12 months. In patients with gastric polyps, not only should the gastric polyps be removed but roentgen examination of the stomach should be carried out every 9 to 12 months. The authors found that the "silent" interval of gastric cancer lasted on the average 18 to 24 months. With a program of periodic reexamination of the more highly susceptible portion of the population, there is reasonable assurance that many more gastric cancers can be detected in the presymptomatic phase of the disease than has heretofore been possible. During a nine and one-half year follow-up of 1,747 patients who were designated as gastric cancer precursor patients, 55 gastric polyps and 19 gastric cancers were found. Of the 19 patients with gastric cancer, only 4 had symptoms that might have led them to seek diagnosis of their condition earlier. The incidence of gastric cancer in the achlorhydric group was 3.2 times the expected national incidence for persons in the same age group. The hypochlorhydric group showed 2.6 times the incidence, and the pernicious anemia group showed 18.3 times the incidence. The incidence in all the precursor groups was 3.8 times the national incidence.

Postmortem Skin Homografts in the Treatment of Extensive Burns. C. P. Artz, J. M. Becker, Y. Sako and A. W. Bronwell. A. M. A. Arch. Surg. **71:**682-687 (Nov) 1955 [Chicago].

Ideally, burned areas should be grafted with sheets of autogenous skin, but in the extensively burned patient there may be insufficient donor sites, and such patients may be unable to tolerate the additional trauma of having skin removed. Application of skin homografts in these patients provides only a temporary coverage of the wound, but this procedure provides time during which the patient's condition may be improved. After the application of homografts, there is less infection, less fibrosis, and less discomfort. Usually the patient's morale improves and his nutritional intake is increased. Thus, although homografts provide only a temporary coverage for the wound, they may be lifesaving in extensively burned patients. The use of skin from a cadaver is much more practical than homografts from living donors. Clinical experience with postmortem homografts during the past two years has demonstrated the success of these grafts in extensively burned patients. Typical case histories of five patients are recorded. Grafts were removed from donor bodies from three to seven hours after death. They survived from two weeks to 47 days. The use of postmortem homografts provided an easy, practical method of achieving temporary wound closure in extensively burned patients. The authors feel that postmortem homografts should be used more extensively. Further investigation is necessary on the time interval after death in which skin may be removed and on methods and length of storage prior to grafting.

Use of a Tantalum, Steel Wire, or Nylon Mesh in Surgical Repair of Abdominal Wall. N. Petrina and T. Mercadante. Minerva chir. **10:**747-754 (Aug. 15) 1955 (In Italian) [Turin, Italy].

The authors used a tantalum, steel wire, or nylon mesh for the surgical treatment of massive postoperative ventral hernia, recurrent inguinal hernia, and large umbilical hernia in 36 patients in whom there was reason to expect eventual recurrences had the standard surgical procedures been adopted. The wound healed by first intention in 30 instances and by second intention in 4. Only in two instances (in both a steel wire mesh had been used) was it necessary to perform another operation to remove the mesh. The resistance of the wall was not impaired, however, because an extensive connective tissue reaction had already taken place. The three types of mesh were always well tolerated; they did not cause immediate or late disturbances or irritation; and there was no relapse, not even in one patient who had had six recurrences in a short time. The tantalum mesh was the best of the three types, and, although infection occurred in 3 of the 15 patients in whom it was used, it was never necessary to operate again to remove the mesh. The steel wire mesh was tolerated less well. This does, however, have the advantage of being more resistant than the tantalum mesh, which has a tendency to break transversally, as a rule 6 to 10 months after its implantation. The nylon mesh was tolerated as well as the tantalum mesh and the wound healed by first intention in all the 11 patients in whom it was used. The authors' patients have been followed for from one and one-half to three years.

Experiences with a New Local Antibiotic (Nebacetin) in Surgery. H. Holzhausen. Medizinische, No. 44, pp. 1540-1545 (Oct. 29) 1955 (In German) [Stuttgart, Germany].

Nebacetin, a combined proprietary preparation of neomycin and bacitracin, which is on the market in the form of a solution, tablets, ointment, and powder, was used as an antibiotic for the local treatment of local bacterial infections in 100 patients, 58 of whom had been admitted to the surgical clinic of the University of Tübingen, Germany, and 42 treated ambulatorily. Twenty patients with complicated fractures, abscess of abdominal walls, empyema after pleurisy, chronic osteomyelitis, chondroma of the third metacarpal bone, necrosis of the femur, and subphrenic abscess, respectively, had previously been given peni-

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cillin, streptomycin, and sulfonamide preparations for periods up to one year but had not responded to antibiotics and chemotherapy. The other 38 hospitalized patients had infected injuries, postoperative infections, furuncles, carbuncles, and fistulas respectively. The ambulatory patients had infected injuries of fingers, paronychia, abscesses, furuncles, and carbuncles. The results obtained in these 100 patients were evaluated according to Meleney and Johnson's suggestions (J. A. M. A. **133:**675 [March 8] 1947) as follows: results were excellent in 40 patients who were favorably influenced in 3 days, good in 43 who were favorably influenced in 8 to 10 days, and questionable in 7, and no effect was obtained in 10. Sixteen of the 20 refractory patients were favorably influenced. Nebacetin appears to be indicated particularly for the preparatory treatment of infected wounds for skin grafting. Compresses or continuous irrigation with Nebacetin caused the dirty coating of wounds to clear and produced fresh granulation surfaces. Local treatment with Nebacetin consisting of puncture, instillation after the removal of necrosis, and irrigation also proved highly effective in furuncles, carbuncles, abscesses, and fistulas. The value of local treatment with Nebacetin, preceding the surgical removal of foreign bodies, sequestrums, or necroses in cases of fistulas, consisted of making the operative area free of bacteria. Instillation of Nebacetin in residual empyema cavities made them free of bacteria for sterile surgical intervention. Infected injuries healed rapidly when Nebacetin powder or ointment was applied. Postoperative infections of wounds responded satisfactorily to dusting with Nebacetin powder. Continuous irrigation with Nebacetin made sterile open wound treatment possible. Failure of Nebacetin therapy resulted when it was impossible to achieve sufficiently close contact of the drug with the focus or adequate concentration of the drug, or when surgical intervention such as sequestrectomy was indispensable. The breadth of the spectrum of Nebacetin is similar to that of penicillin combined with streptomycin. The effect of Nebacetin is not inhibited by blood, plasma, pus or necrotic tissue. Ferments similar to penicillinase are not known for bacitracin and neomycin. The advantages of the Nebacetin therapy are good tissue tolerance, low incidence of resistance, rare sensitization, and broad spectrum effect. Nebacetin may be combined at any time with other antibiotics.

NEUROLOGY & PSYCHIATRY

Long Range Treatment of Multiple Sclerosis with Pancorphen. J. Wilder. J. Nerv. & Ment. Dis. **121:**545-552 (June) 1955 [New York].

Pancorphen is a heart muscle extract that has been digested with pancreatic extract; phenol is added to render it sterile and to increase its therapeutic effect. The author has tried this extract in hundreds of patients in the course of 25 years. The drug is generally administered intravenously in a series of five injections. The treatment is characterized by decided focal neurological reactions with very weak systemic reactions. Vasodilation is an outstanding clinical effect. Observations on 140 patients who were treated with only one series of Pancorphen injections were described by the author in an earlier report. In this paper he deals with the question whether a series of five Pancorphen injections, which yielded temporary, partial remissions in a high percentage of cases should be repeated. The observations he reports were made on 13 patients who received multiple treatment courses and who were followed for years. He found that partial remissions occur even in old and advanced cases, but in the form in which the treatments are now given no cures are produced. Repetition of the treatment course for from 4 to 26 times neither arrests the disease nor does it prevent relapses. Results are less favorable in advanced than in less advanced cases. Treatments started at the beginning of an attack produce better results than those started late in an attack. It appears that better results are obtained if treatments are repeated two or three times a year than at longer intervals. Progressive remissions are more frequent with than without Pancorphen treatment. Furthermore, the duration of attacks may become shortened to such a point that one may speak of aborted attacks. The author is unable to give a definite reply to the question whether the five-injection Pancorphen treatments should be repeated indefinitely at the rate of three times a year, but he is convinced that the treatments should be given at the onset of every attack, during active attacks regardless of duration, and during inactive as well as regressive remissions. Treatment during active phases requires more caution and more individualization than in the inactive stages. The active periods of disease, progressive attacks, or progressive remissions hold more promise for effective therapy than the inactive periods of stabilized defenses. The author feels that for the time being a series of five injections strictly individualized should be given three or four times a year plus emergency treatment in case of new symptoms.

The Use of Frenquel in the Treatment of Disturbed Patients with Psychoses of Long Duration. F. Rinaldi, L. H. Rudy and H. E. Himwich. Am. J. Psychiat. **112:**343-348 (Nov.) 1955 [Baltimore].

Frenquel, previously designated as MER-17, is alpha-4-piperidyl diphenyl carbinol hydrochloride. It is the gamma isomer of Meratran. Despite the structural resemblance between the two drugs, pharmacologically their actions are entirely different. Unlike Meratran, which increases activity in laboratory animals and is a stimulant for human beings, Frenquel diminishes spontaneous activity in animals. The authors studied the effects of Frenquel on disturbed patients with a relatively poor prognosis, unlikely to reveal sudden changes, that is, patients with long histories of hospitalization. The average duration from the time of commitment was 17½ years with a range from 2 to 39 years. The study began with the clinical evaluation of each patient in accordance with nine criteria. By this method a psychiatric profile of the personality structure was obtained. During the period of the study, rounds were made twice daily to determine any changes in the patients. The drug was given in a dose of 10 mg. twice a day. The observations of attendants were taken into consideration in making evaluations. Neither physicians, attendants, nor patients knew who was and who was not receiving the drug, until after the investigators had committed themselves on the status of each of the patients studied. Twenty-one of the 39 patients exhibited definite improvement. In seven others improvement was doubtful. Eight others remained unchanged and three became worse. The three patients whose symptoms were aggravated all had paranoid reactions, but 12 patients with similar diagnoses showed improvement. The authors feel that the results obtained are sufficiently encouraging to indicate use of this drug in other patients with psychoses.

Low Normal Intelligence and Schizophrenia. C. H. Fellner and P. L. Weil. Am. J. Psychiat. **112:**349-353 (Nov.) 1955 [Baltimore].

After several years of experience with insulin coma therapy on schizophrenic patients, the authors have come to the conclusion that the intelligence level of the schizophrenic patient is of great importance in the prognosis. The present survey is of patients belonging to the lower stratum of what is considered the normal variations of human intelligence. These were dull persons; their I. Q. was between 75 and 85, and the level of their social and scholastic achievements was correspondingly low. Thirty schizophrenic "dullards" were given a full course of insulin coma therapy, combined, in 10 patients, with electroplexy. The results are compared with those of the same treatment in schizophrenic patients of originally average normal intelligence. The great discrepancy between the results achieved in schizophrenic patients of originally average normal intelligence and "dullards" appears to be real, and the authors consider the prognosis very unfavorable in the latter. They doubt that insulin coma therapy is indicated in the schizophrenic patient of low intelligence.

Neuropathic Aspects of Bronchopulmonary Cancer. N. Romano and R. A. Eyherabide. Rev. Asoc. méd. argent. **69:**288-290 (Aug. 15-30) 1955 (In Spanish) [Buenos Aires, Argentina].

Bronchopulmonary cancer metastasizes readily. Frequently it produces metastases in the nervous system, the brain, and the spinal cord. The symptoms are those of intracranial hypertension plus the neurological symptoms, which vary with the location of the metastases, masking the symptoms of bronchopul-

monary cancer. The patients complain of dizziness, headache, and pain, which is relieved by roentgen therapy, and sometimes of convulsions and tremor. Hemiplegia and mental deterioration occur in all cases. The cerebral metastases travel by way of the blood and are mainly located in the sylvian territory. Cerebellar metastases are rare and give origin to a typical cerebellar syndrome. A differential diagnosis between primary and metastatic cerebral tumor is feasible from the results of clinical examination of the patient and roentgen examination of the chest. Prior to the appearance of neurological symptoms, all patients pass through an attack of acute bronchopulmonary disease. The roentgenogram of the thorax shows in all cases marked shadows of tumoral pulmonary atelectasis. Intrabronchial tumors originating in the apex of the lung diffuse directly or through the lymph nodes to the upper vertebrae, causing in succession the painful thoracotracheal and apicocostovertebral syndromes and Pardal's syndrome of anginal pain, with medullary compression and destruction of the vertebrae. When the tumor grows in other areas of the lung, the metastases travel by way of the blood, causing medullary compression of the vertebrae in the lower segments of the spine. The authors report four cases. Autopsy confirmed the roentgen diagnosis of cerebral or cerebellar metastases from cancer of the lung in all cases. The histological type of the metastases conformed to that of the pulmonary cancer. The authors emphasize the importance of clinical examination of the respiratory tract and of roentgen examination of the chest in all patients with neurological symptoms or with typical lesions of the nervous system, with the aim of detecting probable presence of cancer of the lung.

GYNECOLOGY & OBSTETRICS

Evaluation of 13,797 Routine Cervical Smears in a Cytology Center. W. S. Rogers, J. E. Ayre and B. Millar. Obst. & Gynec. **6**:487-492 (Nov.) 1955 [New York.].

Of 13,797 routine initial smears (made from cervical cell scrapings in almost all the cases), which were sent to a cytological center for examination in the course of one year, 162 (1.2%) were classified as malignant, 43 (0.3%) as atypical or suspicious, and 214 (1.5%) as precancerous. Clinical description of the cervix revealed a suspicion of malignancy or a lesion in only 20.8% of the group with smears classified as malignant, in 22.2% of those with an atypical or suspicious smear, and in 5.5% of those with a precancerous smear. The remaining patients were described as showing inflammatory changes or erosions. The large number of unsuspected cases is significant. Correlation with microscopic findings may be difficult but should be thorough before advising a patient that she needs no further studies. An appeal is made for the routine widespread use of cytodiagnosis as the only present feasible method of control of cancer of the cervix. The ability to detect the precancer cell complex in cervical cell scrapings provides a potent tool in cancer prevention.

Influence of Follicular Hormone on Corpus Carcinoma. H. Husslein and E. Schüller. Arch. Gynäk. **187**:20-38 (No. 1) 1955 (In German) [Munich, Germany].

On the basis of a survey of the literature and of 601 cases of carcinoma of the body of the uterus that were observed at the Second University Womens Clinic of Vienna during the years 1925 to 1953, the authors attempt to demonstrate that corpus carcinoma grows more rapidly and appears earlier under the influence of estrogens. The following factors from gynecologic pathology indicate this: (1) the concurrence of cystoglandular hyperplasia and adenocarcinoma in the histological picture; (2) atypical hyperplasia appearing as a precancerous condition and through transitional forms leading to true carcinoma; (3) the chronological sequence of hyperplasia and carcinoma; (4) the increased incidence of corpus carcinoma in connection with ovarian tumors that secrete estrone (follicular hormone); (5) the numerous cases of corpus carcinoma after prolonged treatment with estrogenic substances; and (6) the observation that women with belated menopause and prolonged estrogenic stimulation have a higher incidence of corpus carcinoma. Then there is the observation that corpus carcinoma occurs rarely or not at all after surgical castration, but it does occur after roentgen castration, the latter not completely blocking estrogenic stimulation. Furthermore, corpus carcinoma does not occur during sexual maturity and normal biphasic cycles, and its rare occurrence in young women is usually preceded by prolonged cyclical disturbances, particularly by anovular cycles. Knowledge of the role of estrone in corpus carcinoma should be utilized for the prophylaxis. The prolonged action of estrogen must be avoided even during sexual maturity; it must be interrupted either by progesterone or effectively suppressed by testosterone. Menopausal hyperplasia must be counteracted not only with local measures but also by administration of antagonists. Atypical endometrial hyperplasia must be suspected of being a precancerous condition and should be arrested by large doses of testosterone. Prolonged administration of large doses of estrogens should be avoided particularly during the climacteric and the early menopause; testosterone is to be preferred during this period. If there is a tendency to cancer, the use of estrogenic substances is absolutely contraindicated. If castration becomes necessary it should be accomplished by surgery rather than by roentgen treatment. The function of the liver in the metabolism of estrogenic substances should be supported by the administration of vitamins of the B complex.

Ten Thousand Vaginal Smears in the Private Practice of Gynecology. M. S. Allan. Obst. & Gynec. **6**:482-486 (Nov.) 1955 [New York].

Ten thousand examinations (20,000 slides) were made on vaginal smears from 5,949 private gynecologic and obstetric patients in the course of six years. Two slides were collected from every patient, one obtained from the vaginal pool of secretions and one by aspiration from the cervical canal. Of the 5,949 patients, 5,666 (95.2%) had smears that were classified as normal or atypical, 230 (3.9%) had smears that were called suspicious, and 53 (0.9%) had smears that were called positive. Included in the positive classification were 16 patients whose original smears were classified as suspicious. The 246 patients whose smears were suspicious were subjected to repeated examinations, and the 16 whose smears eventually became positive did so within an average time of 10 months; the 16 patients averaged five smear examinations each and most of them were in a younger age group. Pathological confirmation of malignancy was obtained in 45 of the 5,949 patients, and 39 of the 45 had smears classified as positive before the pathological confirmation, an accuracy rate of 86.7%. Five of the other six patients had smears called suspicious; by adding these to the definitely positive smears, an accuracy rate of 97.8% results. Among the patients with proved malignancy, 26 had carcinoma of the cervix, 17 of which were of the early type, and 18 had carcinomas of the endometrium, 7 of which were of the early type; one patient had an ovarian metastasis. Deducting the 45 patients with malignancy from the 5,949 patients under consideration, there remain 5,904 who have no cancer. Smears from 14 of the 5,904 patients were at one time or another called positive; 3 of these 14 patients were lost to follow-up, 5 proved to be false-positive, and 4 continued to have positive or suspicious smears. Twenty-four of the 45 patients with proved malignancy had early carcinoma and only 3 were really advanced cases. Comparison of the readings of cervical smears with those taken from the vagina showed that the cervical smear would have a higher classification in the ratio of 5:1. A strong plea, therefore, is made to incorporate a cervical smear with the vaginal smear in every examination. The author's data suggest that early cancer that had not been detected in any other manner was indicated frequently by the smears and later confirmed by biopsy. Many suspicious smears showing dyskaryosis were found. Patients thus were selected for careful watching because of the likelihood of their developing cancer in the future. Smears proved helpful in the preoperative work-up of gynecologic patients. Smears also provided an added incentive for patients to appear for periodic general and gynecologic examinations. The smear proved to be a simple and effective means of hormone assay. Unsuspected nonmalignant conditions were revealed.

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BOOK REVIEWS

Hiroshima Diary: The Journal of a Japanese Physician, August 6-September 30, 1945. By Michihiko Hachiya, M.D., Director, Hiroshima Communications Hospital. Translated and edited by Warner Wells, M.D. Cloth. $3.50. Pp. 238. University of North Carolina Press, Box 510, Chapel Hill, 1955.

"Hiroshima Diary" may become a medical and literary sensation, and it certainly will be widely read. It is better than most best sellers, for it is devoid of the usual literary trickery. Dr. Hachiya has written of the critical days following the dropping of the first atomic bomb on his native city with engaging simplicity and beauty of expression. With him you live every moment, for he speaks as one speaks only to a diary. If you want to know what it is like to live in a house that is bombed and be called on (as you may some day be) to face the medical problems of catastrophe; if you want to see what it is to put your professional skills to the greatest test imaginable; if you want to see how one man faced problems that you, as a physician, should anticipate, then spend a few hours with Dr. Hachiya. He was wounded and barely able to make his way in the semi-darkness to his hospital. Of this he writes: "I paused to rest. Gradually things around me came into focus. There were shadowy forms of people, some of whom looked like walking ghosts. Others moved as though in pain, like scarecrows, their arms held out from their bodies with forearms and hands dangling. These people puzzled me until I suddenly realized that they had been burned and were holding their arms out to prevent the painful friction of raw surfaces rubbing together. . . . I saw a naked man, and it occurred to me that, like myself, some strange thing had deprived [him] of [his] clothes. An old woman lay near me with an expression of suffering on her face; but she made no sound. Indeed, one thing was common to everyone I saw—complete silence." Dr. Hachiya takes the reader with him through the six days when, bedridden, he observed the activities of those around him and tried from his wooden pallet to satisfy his curiosity as to just what had hit Hiroshima. This curiosity finally led him to the mosaic-like construction of a theory of irradiation sickness in a fine bit of scientific detective work, and in this sense his book has all the drama and suspense that one finds in the tales of a great sleuth. When his wounds had healed enough for the sutures to be removed, he plunged with vigor into his duties as director of what was left of one of Hiroshima's largest hospitals. What the reader hears of the day-to-day problems of patient care, sanitation, and supply under these conditions is no pedantic recitation of a dull man but a vivid description by a man of warmth, perception, intelligence, and great professional ability. Admirably translated, "Hiroshima Diary" is a graphic picture of the destruction that man can wreak on man. It holds many lessons for the medical profession, and it may be read with profit by every physician and medical student.

The Thyroid: A Fundamental and Clinical Text. Editor: Sidney C. Werner, M.D., Sc.D. (Med.). With 60 contributors. Cloth. $20. Pp. 789, with 130 illustrations. Paul B. Hoeber, Inc. (medical book department of Harper & Brothers), 49 E. 33rd St., New York 16, 1955.

The editor of this volume remarks that the profusion of books on the thyroid requires justification for the introduction of a new one. He believes that the recent growth of medical knowledge in general and of knowledge of the thyroid in particular creates a need for a new volume. He questions whether any one man can completely cover the field of thyroid function and disease. This book is divided into 45 chapters written by 60 contributors, including surgeons, internists, and radiologists. Part 1 deals with the physiology of the thyroid, the thyrotropic secretion of the anterior pituitary, effects of steroids and of stress, the biochemistry of the thyroid hormone, and the comparative and microscopic anatomy of the thyroid. Part 2 covers basal metabolism, serum precipitable iodine, serum cholesterol, radioiodine, and miscellaneous tests. Part 3 discusses embryologic development, surgical anatomy, physical examination, pathology, nontoxic goiter, thyroid cancer, hyperthyroidism, hypothyroidism, and thyroiditis. This is a reference book rather than a textbook, but it contains material of interest to medical students and, in some instances, even to the laity. There is a brief discussion of nuclear physics and the use of radioisotopes that should be of great value to older practitioners who graduated before radioisotopes were discovered. The book is well written. The editor has skillfully woven the numerous contributions together. There is little repetition despite the large number of contributors. This book is a valuable addition to the literature on the thyroid. Its greatest defect is that it has no author index.

Psychiatry for the Family Physician. By C. Knight Aldrich, M.D., Associate Professor of Psychiatry, University of Minnesota Medical School, Minneapolis. Cloth. $5.75. Pp. 276, with 18 illustrations. Blakiston Division, McGraw-Hill Book Company, Inc., 330 W. 42nd St., New York 36; 95 Farringdon St., London, E.C.4, England, 1955.

Despite the many books on psychiatry for the general practitioner, this one fills a real need. It is not a textbook, but it begins with fundamentals and develops a logical basis for understanding of the emotional problems of patients. Enough discussion of dynamics is included to make the text understandable without becoming weighty. It is refreshing to find understanding rather than techniques emphasized in the care of patients with emotional problems. The chapter on treatment is especially good as a broad guide for the handling of these problems. The value of the book would have been enhanced if it had been presented in textbook style to provide the reader with a means of quick access to specific topics. The index makes up in part for this deficiency. There is a useful bibliography. The book can be heartily recommended.

Caring for the Sick Child at Home. By Marion Lowndes. Cloth. $3. Pp. 157. Westminster Press, Witherspoon Building, Philadelphia 7, 1955.

This book was written to help mothers cope with the problems that arise when there is a sick child in the home. It stresses the type of care that an average mother can give and does not attempt to turn the mother into a professional nurse. It points out a multitude of things that can be done in an efficient and practical manner to simplify the care of the child and also to make the situation as simple and relaxing as possible for the mother herself. The suggestions should be particularly valuable for any mother faced with a long-term illness in her child or with a prolonged convalescent period. The chapters cover all phases of care of the sick child in the home, including the following subjects: the sick room itself and the equipment that should be located there; local agencies where the mother may obtain special equipment if needed; substitutions that can be made by the resourceful mother from materials at hand in the home; a sample schedule of activities and care for the patient throughout the day; directions for collection of specimens, temperature taking and bathing; instructions on how to follow the orders of the physician and especially on how to administer the medicaments he prescribes; and sickroom recreation for children of various ages. There is an excellent chapter on contagious diseases, including tabulations containing pertinent information concerning the various communicable diseases, with emphasis on isolation techniques in the home. There is also an informative chapter on accident prevention and one on emergency measures that can be instituted by the mother until the doctor arrives. The author's approach is sensible. The style is fluent, and the book is easy to read. The directions should be easy for the average mother to follow. This book should be of value to any mother with a sick child under her care at home.

These book reviews have been prepared by competent authorities but do not represent the opinions of any medical or other organization unless specifically so stated.

QUERIES AND MINOR NOTES

WATER AND MILK SUPPLIES FOR TRAVELERS

To the Editor:—*A woman and an infant aged 15 months have to travel south of the border for some time. She is worried regarding water, milk supply, and leafy vegetables. I know boiling the water and milk will do the trick, but is there any other method of safeguarding these, and what can be done as regards the leafy vegetables?* *M.D., New York.*

Answer.—It is customary to advise travelers to areas where there is reason to doubt the safety of water and milk supplies to resort to some form of physical or chemical treatment of water and milk. If pasteurized milk is not available one can in many circumstances provide beforehand or obtain locally adequate supplies of canned whole, condensed, evaporated or powdered milk that can then be reconstituted by the addition of boiled water. With regard to water the simplest procedure not involving chemical treatment is to boil all water used for drinking, washing, bathing, brushing the teeth, and laundry. The latter is frequently overlooked, and in some unsanitary areas abroad may be a source for cutaneous or systemic or gastrointestinal infections. For drinking purposes and for the treatment of small quantities of water tetraglycine hydroiodide has been found effective in destroying cysts of Endamoeba histolytica. Such water purification tablets (globaline) are widely used effectively. It is generally not recommended that leafy vegetables such as lettuce, which may be infected by virtue of local unhygienic handling, washing, and storage practices, be consumed at all in the raw state. Commercial vinegar and potassium permanganate are frequently used to wash leafy vegetables in certain tropical areas, but there is no reliable assurance that such treatment will prevent infection.

SURGERY FOLLOWING MYOCARDIAL INFARCTION

To the Editor:—*A man had a moderately severe myocardial infarction. Eight weeks later an appendectomy was performed for an acute gangrenous appendix. He developed ventricular tachycardia nine days postoperatively and died in spite of quinidine therapy. 1. What is the added mortality risk for a patient who requires surgery so soon after a myocardial infarction? 2. In such a patient would it be advisable to give continuous antibiotic therapy, and, if necessary, do elective surgery for appendicitis or appendical abscess at a later date? 3. If immediate surgery is done, what precautions must be taken?* *J. A. Mishkin, M.D., Watertown, N. Y.*

Answer.—Comment is made on the relationship between (1) a moderately severe myocardial infarct, (2) operation for appendicitis, and (3) death. The time interval between the coronary attack and appendicitis was eight weeks and between the operation and death was nine days; these time intervals are important. The nine-day interval indicates that the operation for appendicitis had nothing to do with death. If it were a factor, death would have occurred during or immediately after the operation. This patient developed ventricular tachycardia that, no doubt, was followed by fibrillation. This disturbance in mechanism is the usual cause of death after coronary artery occlusion. The greatest danger from this is in the first few days of a critical 14-day period. Operation should not be done during this period. The risk of operation is high during the first week and tapers off during the second week. Antibiotic therapy should be used and the abscess drained or the appendix removed after this two-week period. Operation is not without danger after this initial period, but, if urgent, it can be done. Inhalation anesthesia should not be used. Spinal anesthesia or local anesthesia are less dangerous. The patient should be placed in the most comfortable position for him to breathe. He should be spared all pain, because pain can produce dangerous reflex responses on the heart. Operation should be done with dexterity. The patient should be in contact with his surroundings and should be calm and cooperative. It is probably not advisable to use a face mask for administration of oxygen. The surgeon should be prepared to defibrillate the heart if death occurs. There is a possibility that the heart can be started to beat again because the death factor is often small and reversible. Elective operations may be done six months after the attack.

The answers here published have been prepared by competent authorities. They do not, however, represent the opinions of any medical or other organization unless specifically so stated in the reply. Anonymous communications and queries on postal cards cannot be answered. Every letter must contain the writer's name and address, but these will be omitted on request.

INSECTICIDES USED IN TOBACCO RAISING

To the Editor:—*Are there any benzin ring compounds or insecticides employed in the curing of tobacco or the manufacturing of cigarettes? Have cigarettes ever been considered as a possible etiological factor in aplastic anemia?*

S. L. Blum, M.D., Beaumont, Texas.

Answer.—There is no "benzin" ring, but considering hydrocarbons in general it is observed that those that have attracted attention in connection with smoking are the fluids of lighters. Theoretically some benzene could enter lighter fluids. Such substance is an established source of aplastic anemia. Benzene may not be expected to appear in such fluids since there are much better agents, but its homologues, toluene and xylene, might be used to provide luminosity. Arsenic compounds are the archetype of insecticides employed in tobacco raising. Thousands of tons have been so employed. On a smaller scale scores of other insecticides have been introduced. Presently there is no proof that any insecticide in tobacco measurably is harmful to tobacco users, although tobacco growers may have been damaged. One might assume that if arsenic in tobacco contributed to the rising rate of pulmonary cancer, its action would not be limited to cigarette tobaccos, since cigar tobaccos are equally treated with arsenicals and no high frequency of lung cancer has been ascribed to cigar smoking, however other factors such as the inhalation of smoke by cigar smokers as compared with cigarette smokers must be considered.

CARBON DIOXIDE TOXICITY

To the Editor:—*A patient who works in a frozen food refrigerator states that the carbon dioxide content is higher than normal and that it gives him a headache. Is carbon dioxide in concentration of less than 20% considered toxic? If so, what is the maximum allowable concentration? What is the minimum allowable concentration of oxygen for moderate manual labor, such as packing cartons on a truck? Would unpackaged fresh vegetables in a refrigerator emit any toxic gas other than carbon dioxide?*

James N. Dewane, M.D., Evanston, Ill.

Answer.—Carbon dioxide commonly is not regarded as a toxic gas and only as a simple asphyxiant. Still, its affronts to physiological processes are so definite as to make the label of "toxicity" tenable. The maximum allowable concentration level is 0.5% or 5,000 ppm of air. For many years, 5 to 10% of carbon dioxide has been included in oxygen in connection with asphyxiation. Lately this has been condemned (*Brit. M. J.* **1**:468 [Feb. 19] 1955). There, it is stated that carbon dioxide at the 15 or 20% level is poisonous. Hunter (Diseases of Occupations, London, English Universities Press, 1955) states: "A proportion [of carbon dioxide] about 1% in the air is considered as directly harmful, though 2%, which was common long ago in the fermenting vats in breweries, produced no symptoms in the workmen employed there. A proportion of 3% suffices to induce dyspnea with slight headache; if the proportion is from 5% to 6%, the dyspnea is pronounced and accompanied by head-

ache and sweating; a proportion of 10% breathed only for a minute sets up headache, visual disturbances, tinnitus, tremor and loss of consciousness. The victim of carbon dioxide poisoning rapidly becomes unable to stand and passes into coma." Notwithstanding the foregoing, it is observed that all exhaled air contains in excess of 4% carbon dioxide or more than 40,000 ppm of air. When the percentage of oxygen in air, which normally approximates 21% by volume, drops to 12%, danger is involved. While at all times the atmosphere breathed should be maintained close to the normal, it is not known that damage is prospective when the percentage of oxygen is in excess of 16. Apart from trace quantities of such other gases as methane, it is not known that untreated fresh vegetables emit gases other than carbon dioxide and the trace quantities mentioned are unimportant and nontoxic. Extensive data are recorded (Industrial Hygiene and Toxicology, vol. 2, Patty, F. A., editor, New York, Interscience Publishers, Inc., 1949; and Flury, F., and Zernik, F.: Schädliche Gase, Berlin, Germany, Springer-Verlag, 1931).

TOXIC DIFFUSE GOITER

To the Editor:—*A 55-year-old woman on April 29, 1955, gave a one year history of palpitations, loss of weight, intolerence to heat, insomnia, and general hyperactivity. Her temperature was 99 F (37.5 C), pulse rate 124 per minute (irregular), and blood pressure 130/60 mm. Hg. The thyroid gland showed some enlargement especially of the right lobe but also involving the left lobe. The skin was warm and moist, there was a fine tremor of the hands, and there was auricular fibrillation with a heart rate of 124 per minute but with no evidence of congestive heart failure. The basal metabolic rate on May 2, 1955, was +60%, and the white blood cell count was 5,600 per cubic millimeter, with 46% polymorphonuclear neutrophil leukocytes and 50% lymphocytes. She was placed on Tapazole therapy (10 mg. every 8 hours), digitalized with Gitalin, and given vitamins. On June 15, examination of the heart revealed a regular sinus rhythm with occasional extrasystoles and a rate of 100 per minute. On June 29, 1955, the heart rate was 84 per minute and only showed some sinus arrhythmia. The blood pressure was 125/80 mm. Hg. These changes have persisted until the present. She is feeling better, is eating well, and is gaining weight. The fine tremor of the hands has disappeared, and the intolerance to heat has diminished. The basal metabolic rate on July 6, 1955, was +12. The thyroid gland has decreased in size somewhat. She is still taking 30 mg. of Tapazole daily and 0.5 mg. of Gitalin. The white blood cell and differential counts have become normal. Should treatment with Tapazole and Gitalin be continued indefinitely, and, if so, when and how should the Tapazole dosage be decreased in order to arrive at the minimum maintenance dose? Is radioactive iodine a better and more definite treatment for this particular patient? Would you consider surgery in a patient this age with the previous heart findings, and, if so, how would you prepare her for it with Lugol's solution?* *M.D., New York.*

Answer.—It is assumed this patient has toxic diffuse goiter (Grave's disease). The dosage of Tapazole seems to have been a little inadequate. McCullagh at the Cleveland Clinic continues its administration until the basal metabolic rate is slightly below zero, pulse rate is entirely normal, symptoms have completely disappeared, and strength and weight are normal. The antithyroid drug is continued with diminution in dosage for at least a year. If hypothyroidism is caused and a slight reduction in dosage leads to increase of symptoms, suggestive of impending recurrence, the dose is increased and desiccated thyroid given concurrently. A second course is used by some, but others are not enthusiastic about this. Radioactive iodine is a more definitive treatment. About 75% of patients obtain complete and lasting relief on a single dose. The remainder require one or more additional doses. Recurrences are rare. McCullagh has seen only six recurring cases in 1,400 patients. The only complication is hypothyroidism, which occurs in about 10% of the patients treated. Surgery is still a good treatment and may be offered to patients with auricular fibrillation without decompensation. Most surgeons prefer patients to be treated with 1 ml. of Lugol's solution given three times a day for three weeks prior to operation. Antithyroid drugs are usually withdrawn two weeks before operation.

USE OF HEPARIN FOLLOWING THROMBOSIS

To the Editor:—*Which is the most satisfactory type of heparin (depo-heparin or sodium heparin) for use during the first few days of phlebothrombosis or acute myocardial infarction until dicumarol effect begins? Please summarize the status of sodium heparin in regard to dosage, route of administration, and frequency of coagulation time determinations necessary for adequate control. Is the subcutaneous and intramuscular administration of sodium heparin recommended?*

M.D., West Virginia.

Answer.—The most satisfactory preparation is aqueous sodium heparin. Repository heparin has given inconsistent results that make it hard to maintain thrombostasis in the desired range; however, it is more convenient. When it is used, it may be given subcutaneously in the anterior thigh in doses of 200 mg. for patients under 150 lb. (68 kg.) and 300 mg. for heavier patients. Clotting times are measured every 12 hours, and the dosage is adjusted correspondingly. The most reliable method is to give aqueous heparin intravenously. Aqueous heparin is supplied in 10 ml. vials containing 50 mg. of heparin and in concentrated preparations containing 50 to 100 mg. per milliliter. The latter are for intramuscular use and, so used, yield more predictable curves of clotting time than the depo-heparin preparations. For intravenous treatment, a Lee-White clotting time is done in duplicate; it is normally 5 to 12 minutes; the first dose is then given, 50 mg. for patients weighing less than 150 lb. and 75 mg. for heavier patients. Clotting time is measured at one hour, when it is usually 50 to 75 minutes. This checks hyposensitivity or hypersensitivity. It is measured again at three and four hours. If the clotting time is normal, the dose is increased. It is usually normal at four hours, or nearly so, in which case the set dosage is repeated every four hours. If clotting is delayed at four hours, the measurement is repeated at six hours or until it falls to normal and the second dose given whenever this recovery has occurred and at like intervals thereafter, with spot checks of clotting time once or twice daily thereafter before a dose. Sodium heparin for intramuscular use is given in an initial dose intramuscularly or subcutaneously of 50 or 100 mg. The clotting times are done every hour for four hours to determine a set schedule, which is usually 50 mg. every three or four hours, with clotting times measured twice daily at three hours after the last dose. For rapid onset of action by this technique, give 50 mg. intravenously and 50 mg. intramuscularly and follow as just described.

CANDIDA INFECTIONS

To the Editor:—*A patient has been bothered with subungual fungous infections for a long time. No acid-fast organisms have been demonstrated, but sputum has been high in Candida albicans and intestinal moniliasis is present. He has had a long vigorous course of iodides, and, while the external picture seems to have improved and the intestinal symptoms have abated some, the sputum is still abundant in Candida. He has now developed intermittent swollen joints with redness and tenderness—all mild, but recurrent with activity. Sedimentation rate is high; no cardiac picture; no rheumatic history. He responds to rest, temporarily. 1. Is the joint picture associated with moniliasis? 2. Could it be associated with iodide therapy? 3. What is being used, further, for pulmonary and intestinal moniliasis?* *M.D., New York.*

Answer.—A new antibiotic preparation, Mycostatin, has been reported to be remarkably effective in systemic monilial infections. It can be given intravenously. Iodides, while effective in blastomycosis and torulosis, have no effect on moniliasis whatsoever. The disease of the joints could be a toxic manifestation of general moniliasis but could also represent a drug reaction to iodides. In the latter case it should subside when the blood and urine are free of iodides. If iodides are still circulating in the blood, 3 to 4 gm. of sodium chloride should be given daily by mouth to accelerate elimination.

MYOCARDIAL INFARCTION AND WORKMEN'S COMPENSATION

To the Editor:—*In the Queries and Minor Notes section in* The Journal, *Oct. 15, 1955, page 737, the following question regarding workmen's compensation was submitted: "What is the consensus regarding the relationship of effort in myocardial infarction, with reference to the Workmen's Compensation Act?" The reply is a fair statement of conditions existing at present. However, the last sentence of the reply states that "since the tendency is to give the workingman every 'break' his case would probably be judged compensable no matter what is the physician's opinion as to the relationship of physical exertion and myocardial infarction." This statement is without any basis in fact. All referees' decisions in such cases are based on medical evidence, and, unless there is such medical evidence giving causal relationship, no arbitrary ruling would be made giving the claimant the so-called break. Where physicians of equal experience and repute disagree and the evidence submitted is in conflict, then quite properly causal relationship is found for the claimant. There must however always be medical evidence presented claiming causal relationship before a finding of such relationship is made.*

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FEEDING PROBLEM CHILD

To the Editor:—*I would like to comment on the consultant's answer to "Feeding Problem Child,"* The Journal, *Oct. 15, 1955, page 737. I agree that the "problem is more to treat the parents than the child." I agree that a complete change of tactics in the family may help in such situations, but the last sentence negates the whole spirit of the consultant's answer. Hospitalization of a child such as the one described cannot be too strongly condemned. True, the child might start eating, but at what cost? The essence of the problem stated lies in the parent-child relationship, and a traumatic separation (traumatic for both parent and child) may cure the symptom but is bound to aggravate the basic disease. Why not counsel with the parents and allow them to express their own ideas and feelings and to work with the doctor on how they got into this mess and what they can do to get out of it. This approach will "treat the parents" and possibly help them to avoid future pitfalls. The inquirer should be referred to Aldrich's "Feeding Our Old Fashioned Children" (New York, the Macmillan Company, 1941), Senn's book on feeding children (All About Feeding Children, New York, Doubleday & Company, 1944), and Spock's section on the preschool child (The Common Sense Book of Baby and Child Care, New York, Duell, Sloane, & Pearce, Inc., 1946).*

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ULTRASONIC THERAPY

To the Editor:—*In the Queries and Minor Notes Section in* The Journal, *Oct. 8, 1955, page 633, is an answer on the use of ultrasonic therapy for bronchial asthma. I should like to echo the sentiments of the consultant and relate my experience with one case. A 46-year-old man with a history of asthma and hay fever, well controlled by allergic management, developed a severe, acute attack of allergic rhinitis (hay fever) and bronchial asthma about two hours after receiving ultrasonic treatment to the chest. This attack lasted 36 hours. The exact mechanism of such a reaction I do not know, but it does show what may happen to a potential asthmatic patient from ultrasonic therapy to the lungs.*

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TUBERCULOSIS OF KIDNEY

To the Editor:—*May we take exception to the comment in answer to the query on "Tuberculosis of Kidney" in* The Journal, *Sept. 10, page 153, that there is no special advantage in using the potassium salt (of aminosalicylic acid) except to desensitize and to restrict sodium intake? In our article* (Am. Rev. Tuberc. **71**:*220, 1955), we pointed out that the chief advantage of the potassium salt of aminosalicylic acid was its tolerability and "patient-acceptance," including freedom from nausea. Of 38 patients deliberately solicited because of intolerance to other aminosalicylate compounds (namely, aminosalicylic acid and sodium aminosalicylate), only 3 were unable to take potassium aminosalicylate in 12 gm. daily doses for prolonged periods. An additional 21 patients who had received no previous aminosalicylic acid therapy were also able to tolerate the potassium aminosalicylate in full dosage. Our more recent data, which cover an 18-month period from the time potassium aminosalicylate was first used, give a total of 120 patients treated. Of these, 78 were intolerant to other forms of aminosalicylic acid and only 5 in this group could not take potassium aminosalicylate consistently in 12 gm. daily doses. The remaining 42 patients (no previous potassium aminosalicylate therapy) had no difficulty in taking the drug. A similar drug tolerance study was performed independently by Chernish and Peck (An Evaluation of Potassium Para-Aminosalicylate,* Antibiotic Med. **1**:*377 [July] 1955). These authors, using potassium aminosalicylate in capsule form, reported an intolerance rate of only 6% in a group of 102 patients, again, intolerance to potassium aminosalicylate occurring in those patients who were intolerant to all other forms of aminosalicylic acid. The over-all tolerance rate of 95% for potassium aminosalicylate certainly is far superior to tolerance rates for other aminosalicylate preparations. As a result of such data, we feel that the very high degree of patient tolerance and acceptance is a distinct advantage of potassium aminosalicylate therapy. As another advantage of potassium aminosalicylate may we cite the study of plasma aminosalicylate concentrations following the administration of potassium aminosalicylic, sodium aminosalicylic, and aminosalicylic acid. The potassium salt produced higher plasma concentrations than did the other two compounds when all three drugs were tested in each of eight subjects. These results were duplicated by Chernish and Peck. With reference to the patient mentioned in the query, we feel that if his vomiting is secondary to aminosalicylate medication, this symptom might well be relieved by the substitution of potassium aminosalicylic for the aminosalicylic acid he is receiving. If however, the vomiting is secondary to renal disease, potassium aminosalicylate would not improve the situation.*

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EATING ACTIVE YEAST DAILY

To the Editor:—*I would like to offer the following observation after reading a query in* The Journal, *Oct. 8, 1955, page 633. A patient was afflicted with micrococcic (staphylococcic) infections of the thumb from 1929 to 1938. Then he quit smoking and ceased having thumb infections but had boils, sometimes as large as hen's eggs on other locations. A special eight-hour sugar tolerance test showed a higher curve than normal. A diet for diabetics prevented the boils but reduced body weight. It was necessary to use insulin, sulfonamides, or antibiotics to prevent or cure the boils on a normal diet. Since the thesis of Robert Houston Hamilton Jr. (Minneapolis, University of Minnesota, 1933) showed that active yeast lowered the blood sugar, the patient has eaten active dry yeast for the last five years daily along with a normal diet and has had neither boils nor vitamin B (thiamine) deficiency.*

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JOURNALS ABSTRACTED IN THE CURRENT MEDICAL LITERATURE DEPARTMENT, SEPTEMBER-DECEMBER 1955

Abstracts have been made of important articles in the following journals in the Current Medical Literature Department of THE JOURNAL during the past four months. Any of the journals, except those starred, will be lent by the Library of the American Medical Association to individuals in Continental United States and Canada who subscribe to its scientific periodicals and to members of the American Medical Association and its student organization. No charge is made to members, but the fee for other borrowers is 15 cents in stamps for each periodical. Three journals may be borrowed at a time for a period not exceeding five days. Thus most of these journals are accessible to the general practitioner.

*A. M. A. American Journal of Diseases of Children. Chicago.
*A. M. A. Archives of Dermatology. Chicago.
*A. M. A. Archives of Industrial Health. Chicago.
*A. M. A. Archives of Internal Medicine. Chicago.
*A. M. A. Archives of Neurology and Psychiatry. Chicago.
*A. M. A. Archives of Ophthalmology. Chicago.
*A. M. A. Archives of Otolaryngology. Chicago.
*A. M. A. Archives of Pathology. Chicago
*A. M. A. Archives of Surgery. Chicago.
Acta chirurgica scandinavica. Stockholm.
Acta clinica belgica. Brussels.
Acta medica et biologica. Niigata, Japan.
Acta medica scandinavica. Stockholm.
Acta tuberculosea belgica. Brussels.
American Heart Journal. St. Louis.
American Journal of Clinical Pathology. Baltimore.
American Journal of Digestive Diseases. Fort Wayne.
American Journal of Gastroenterology. New York.
American Journal of the Medical Sciences. Philadelphia.
American Journal of Medicine. New York.
American Journal of Obstetrics and Gynecology. St. Louis.
American Journal of Ophthalmology. Chicago.
American Journal of Pathology. Ann Arbor, Mich.
American Journal of Physical Medicine. Baltimore.
American Journal of Psychiatry. New York.
American Journal of Public Health. Albany, New York.
American Journal of Roentgenol. and Radium Therapy. Springfield, Ill.
American Journal of Surgery. New York.
American Journal of Tropical Medicine and Hygiene. Baltimore.
American Practitioner and Digest of Treatment. Philadelphia.
American Review of Tuberculosis. New York.
American Surgeon. Baltimore.
Angiology. Baltimore.
Annales chirurgiae et gynaecologiae Fenniae. Helsinki.
Annals of Allergy. St. Paul.
Annals of Internal Medicine. Lancaster, Pa.
Annals of Otology, Rhinology and Laryngology. St. Louis.
Annals of the Rheumatic Diseases. London.
Annals of Surgery. Philadelphia.
Antibiotic medicine. New York.
Archiv für Gynäkologie. Munich.
Archiv für klinische Chirurgie. Berlin.
Archives of Disease in Childhood. London.
Archives des maladies de l'appareil digestif et des maladies de la nutrition. Paris.
Archives des maladies du coeur et des vaisseaux. Paris.
Archivio italiano di chirurgia. Bologna.
Archivio italiano di pediatria e puericoltura. Bologna.
Archivum chirurgicum neerlandicum. Arnhem.
Arizona Medicine. Phoenix, Arizona.
Ärztliche Wochenschrift. Berlin.
Australasian Annals of Medicine. Sydney.
Australian and New Zealand Journal of Surgery. Melbourne.
Australian Journal of Experimental Biology and Medical Science. Adelaide.
Beiträge zur klinischen Chirurgie. Munich.
Beiträge zur Klinik der Tuberkulose. Berlin.
Bibliotek for laeger. Copenhagen.
Blood. New York.
Boletín de la Asociación médica de Puerto Rico. Santurce.
British Heart Journal. London.
British Journal of Industrial Medicine. London.
British Journal of Radiology. London.
British Journal of Surgery. Bristol.
British Journal of Urology. Edinburgh.
British Journal of Venereal Diseases. London.
British Medical Journal. London.
Bulletin of the Johns Hopkins Hospital. Baltimore.
Bulletin of the Los Angeles Neurological Society. Los Angeles.
Canadian Medical Association Journal. Montreal.
Cancer. Philadelphia.
Chinese Medical Journal. Peking.
Chirurg. Berlin.
Circulation. New York.
Circulation Research. New York.
Clinica pediatrica. Bologna.
Clinica terapeutica. Rome.
Connecticut State Medical Journal. New Haven, Conn.
Cuore e circolazione. Rome.
Danish Medical Bulletin. Copenhagen.
Deutsche medizinische Wochenschrift. Stuttgart.
Deutsche Zeitschrift für Nervenheilkunde. Berlin.
Diabetes. New York.
Die Medizinische. Stuttgart.
Diseases of Chest. Chicago.
Diseases of the Nervous System. New York.
Electroencephalography and Clinical Neurophysiology. Montreal.
Fertility and Sterility. New York.
Fortschritte auf dem Gebiete der Röntgenstrahlen vereinigt mit Röntgenpraxis. Stuttgart.
Gaceta médica de Mexico. Mexico. D. F.
Gastroenterology. Baltimore.
Gazzetta medica italiana. Milan.
Giornale di clinica medica. Bologna.
Giornale italiano di chirurgia. Naples.
Giornale di gerontologia. Florence.
Glasgow Medical Journal. Glasgow.
GP (Journal of American Academy of General Practice). Kansas City, Mo.
Harefuah. Jerusalem-Tel Aviv.
Helvetica paediatrica acta. Basel.
Hospital. Rio de Janeiro.
Indian Medical Gazette. Calcutta.
International Journal of Leprosy. New Orleans.
Journal of Allergy. St. Louis.
Journal of the American Dietetic Association. Chicago.
Journal of the American Geriatrics Society. Baltimore.
Journal of Bone and Joint Surgery. Boston and London.
Journal de chirurgie. Paris.
Journal of Chronic Diseases. St. Louis.
Journal of Clinical Endocrinology and Metabolism. Springfield, Ill.
Journal of Clinical Investigation. New York.
Journal of the Florida Medical Association. Jacksonville.
Journal of Immunology. Baltimore.
Journal of the Indiana State Medical Association. Indianapolis.
Journal of International College of Surgeons. Chicago.
Journal of Iowa State Medical Society. Des Moines.
Journal of the Kansas Medical Society. Topeka.
Journal of Laryngology and Otology. London.
Journal of the Louisiana State Medical Society. New Orleans.
Journal of the Maine Medical Association. Portland.
Journal of the Medical Association of the State of Alabama. Montgomery.
Journal of the Medical Association of Georgia. Atlanta.
Journal of the Medical Society of New Jersey. Trenton.
Journal of Mental Science. London.
Journal of the Michigan State Medical Society. St. Paul.
Journal of the National Cancer Institute. Washington, D. C.
Journal of Nervous and Mental Disease. Baltimore.
Journal of Neurosurgery. Springfield, Ill.
Journal of Obstetrics and Gynaecology of the British Empire. London.
Journal of Pediatrics. St. Louis.
Journal of the Royal Army Medical Corps. London.
Journal of the Tennessee State Medical Association. Nashville.
Journal of Thoracic Surgery. St. Louis.
Journal of Urology. Baltimore.
Klinicheskaya meditsina. Moscow.
Klinische Wochenschrift. Berlin.
Lancet. London.
Laryngoscope. St. Louis.
Laval médical. Quebec.
Lyon chirurgical. Paris.
Maandschrift voor kindergeneeskunde. Leyden.
Maryland State Medical Journal. Baltimore.
Medical Journal of Australia. Sydney.
Medicina clínica. Barcelona.
Medicine. Baltimore.
Memphis Medical Journal. Memphis.
Minerva cardioangiologica. Turin.
Minerva chirurgica. Turin.
Minerva gastroenterologica. Turin.
Minerva ginecologica. Turin.
Minerva medica. Turin.
Minerva nefrologica. Turin.
Minerva nipiologica. Turin.
Minerva pediatrica. Turin.

* Cannot be lent.

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Minnesota Medicine. St. Paul.
Missouri Medicine. St. Louis.
Monatsschrift für Kinderheilkunde. Berlin.
Münchener medizinische Wochenschrift. Munich.
Nebraska State Medical Journal. Lincoln.
Nederlandsch tijdschrift voor geneeskunde. Haarlem.
Neurology. Minneapolis.
New England Journal of Medicine. Boston.
New York State Journal of Medicine. New York.
Nordisk medicin. Stockholm.
North Carolina Medical Journal. Winston-Salem.
Northwest Medicine. Seattle.
Obstetrics and Gynecology. New York.
Ohio State Medical Journal. Columbus.
Pediatria Polska. Warsaw.
Pediatrics. Springfield, Ill.
Pediatriya. Moscow.
Pennsylvania Medical Journal. Harrisburg.
Plastic & Reconstructive Surgery. Baltimore.
Policlinico (sezione chirurgica). Rome.
Policlinico (sezione medica). Rome.
Policlinico (sezione pratica). Rome.
Postgraduate Medicine. Minneapolis.
Prensa médica argentina. Buenos Aires.
Presse médicale. Paris.
Proceedings of Staff Meetings of Mayo Clinic. Rochester, Minn.
Progresso medico. Naples.
Quarterly Journal of Medicine. Oxford.
Quarterly Journal of Studies on Alcohol. New Haven.
Radiology. Syracuse, N. Y.
Revista de la Asociación médica argentina. Buenos Aires.
Revista da Associação médica brasileira. São Paulo.
Revista brasileira de cirurgia. Rio de Janeiro.
Revista clínica española. Madrid.
Revista do Hospital das clínicas da Faculdade de medicina da Universidade de São Paulo. São Paulo.
Revista de investigación clínica. Mexico, D. F.
Revista médica de Chile. Santiago.
Revista paulista de medicina. São Paulo.
Revue du rhumatisme. Paris.
Revue de la tuberculose. Paris.
Riforma medica. Naples.
Rivista clinica pediatrica. Florence.
Rivista d'ostetricia e ginecologia pratica. Milan.
Rocky Mountain Medical Journal. Denver.
Schweizerische medizinische Wochenschrift. Basel.
Semaine des hôpitaux de Paris. Paris.
Semana médica. Buenos Aires.
South African Medical Journal. Cape Town.
Southern Medical Journal. Birmingham, Ala.
Strasbourg médical. Strasbourg.
Surgery. St. Louis.
Surgery, Gynecology and Obstetrics. Chicago.
Texas State Journal of Medicine. Austin.
Thorax. London.
Thoraxchirurgie. Stuttgart.
Tidsskift for den norske lægeforening. Oslo.
Tumori. Milan.
Ugeskrift for læger. Copenhagen.
Ulster Medical Journal. Belfast.
Union médicale du Canada. Montreal.
Vestnik khirurgii. Leningrad.
Virginia Medical Monthly. Richmond.
Western Journal of Surgery, Obstetrics and Gynecology. Portland, Ore.
Wiener klinische Wochenschrift. Vienna.
Wiener medizinische Wochenschrift. Vienna.
Wisconsin Medical Journal. Madison.
Zeitschrift für die gesamte innere Medizin und ihre Grenzgebiete. Leipzig.
Zeitschrift für Tuberkulose. Leipzig.
Zeitschrift für Urologie. Leipzig.
Zentralblatt für Gynäkologie. Leipzig.

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SUBJECT INDEX

The letters used to explain in which department the matter indexed appears are as follows: "E," Editorial; "C," Correspondence; "ab," abstracts; the asterisk (*) indicates an original article in THE JOURNAL.

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Am.—American	*Inst.—Institute*
A.—Association	*Internat.—International*
Coll.—College	*M.—Medical*
Commn.—Commission	*Med.—Medicine*
Comm.—Committee	*Nat.—National*
Conf.—Conference	*Pharm.—Pharmaceutical*
Cong.—Congress	*Phys.—Physicians*
Dist.—District	*Soc.—Society*
Div.—Division	*Surg.—Surgery*
Found.—Foundation	*Surgs.—Surgeons*
Hosp.—Hospital	*S.—Surgical*

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235- 410	4	Sept. 24
411- 536	5	Oct. 1
537- 634	6	Oct. 8
635- 738	7	Oct. 15
739- 830	8	Oct. 22
831- 980	9	Oct. 29
981-1078	10	Nov. 5
1079-1174	11	Nov. 12
1175-1256	12	Nov. 19
1257-1336	13	Nov. 26
1337-1424	14	Dec. 3
1425-1500	15	Dec. 10
1501-1580	16	Dec. 17
1581-1700	17	Dec. 24
1701-1804	18	Dec. 31

INTERNSHIP & RESIDENCY NUMBER: Sept. 24, 1955 **EDUCATION NUMBER: October 8, 1955**

CLINICAL MEETING: October 29, 1955

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